

# AFTER THE BATTLE

**SOVIET VICTORY  
IN THE ARCTIC**



**Number 99**

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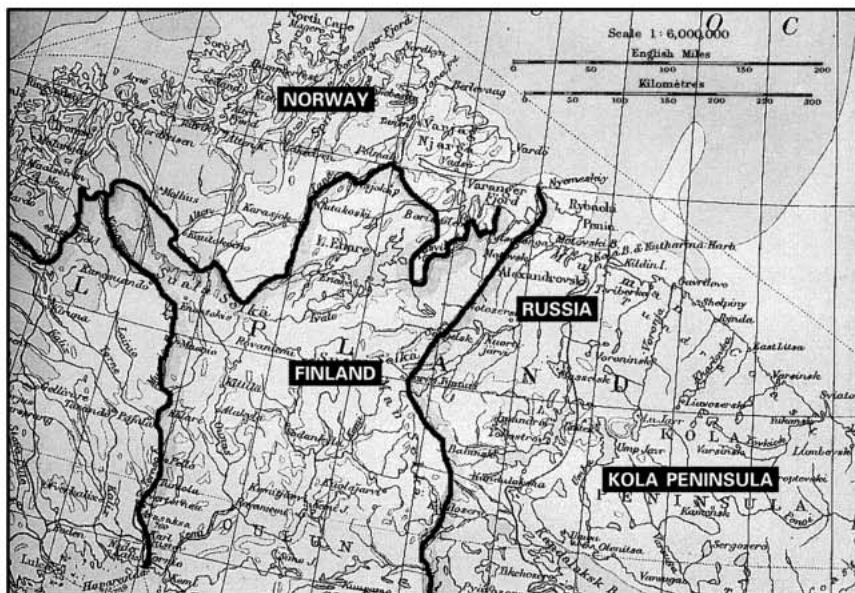
**Front Cover:** The wreckage of a Junkers Ju 88 which crashed in what is now the Lapland national park north-west of Apatity (see page 25). (Lars Gyllenhaal)

**Centre Pages** This II-2 of the Soviet 214th Attack Bomber Regiment was shot down while attacking the Elvenes bridge outside Kirkenes. In 1984, a group of Norwegians, headed by Jostein Pedersen, Terje Danielsen and Björn Sture Nilsen, decided to recover the aircraft. *Inset:* The same II-2 today after having been restored in 1989 by Russian enthusiasts in Revda near Murmansk. (Elsa M. Danielsen)

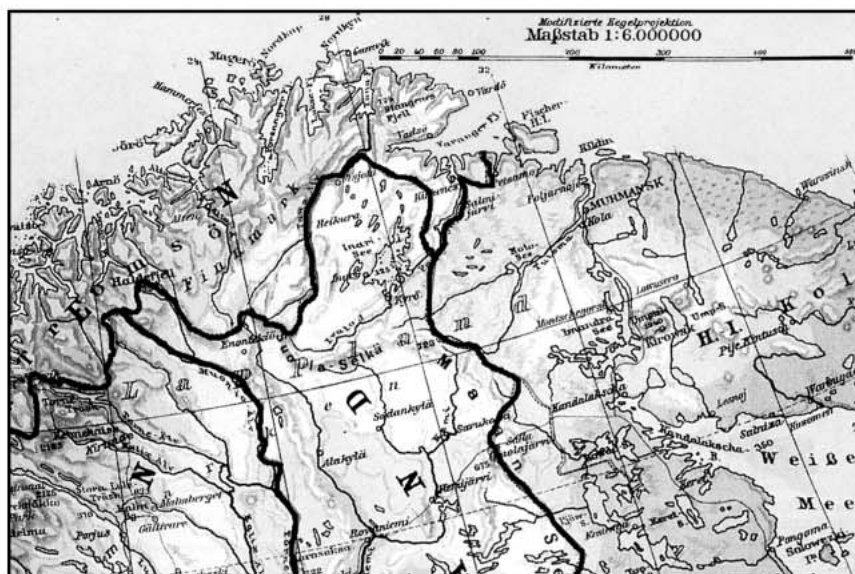
**Back Cover:** *Top:* Relatives of men killed in the IJzendijke explosion of October 20, 1944, pay their respects in the Adegem Canadian Cemetery. *Bottom:* Exactly 53 years after, a memorial to the tragedy is unveiled. (Karel Margry)

**Acknowledgements:** For help with the IJzendijke story, Karel Margry would like to thank: in Britain: veterans Vivian Clarke, Charles Foster, Jim Gooch, Ted Hamston, Harry Hooker, Eric Pattenden, MC, Harry Prince and Martin Reagan (whose 1994 account *Two visits to IJzendijke* was most useful); also Barry Aldridge, Mrs Patricia Blomfield, Deric Brock, and David Fletcher of the Bovington Tank Museum; in the Netherlands: Geert Aalders, Christaene de Dobbeleere-Govaert, Hans Houterman, Leon Neve, Piet Schoe, Johan Steenkiste and A.P. Willems; and in Belgium: George Spittaël.

**Photo Credits:** PAC = Public Archives of Canada



From the 12th century until 1809, Finland was part of Sweden until it became a grand duchy of Russia. Its independence was declared in December 1917 during the Russian Revolution but not recognised by the Soviet Union until October 1920. The map above shows the pre-World War II boundary in the north with a narrow corridor separating the strategic Soviet Kola Peninsula in the east and Norway to the west. In October 1939, the Russians made territorial demands which were rejected by the Finns. Relations between the two countries became steadily worse, the Soviets cancelling the Non-Aggression Pact on November 28, invading Finland two days later. After a bitter 3½ month war, a peace treaty was signed in which Finland lost territory to the Soviet Union. Following the German invasion of Norway in April 1940 and its capitulation two months later, Finland became a reluctant ally of Germany and in 1944 fought its second war with the Russians. Overall, the Finnish 268,000-man army and the German 20. Gebirgs-Armee (Mountain Army) of 180,000 troops faced 45 Soviet divisions — some 450,000 men. The Soviet attack began on June 10, the Russians regaining their pre-June 1941 frontier within four weeks and the Finnish government suing for peace less than a month later. This time, the Finns had to cede to the Soviet Union a large part of south-eastern Karelia (an autonomous region within Russia) and the Petsamo (Pechenga) area in the north, so denying Finland its corridor to the ice-free Arctic coast (see map below).



Finland's exit from the war left the German forces in the north in a precarious position. For three years, they had threatened the vital Soviet port of Murmansk while protecting the northern flank of the forces occupying Norway. Now, the Soviets were to launch the Petsamo-Kirkenes Offensive — one of the largest yet least-known battles in Europe during the Second World War. It was also one of the most far-reaching in that the Red Army's well-disciplined liberation of northern Norway made possible the co-operation today between northern Scandinavia and north-west Russia. Our author, Major James F. Gebhardt, formerly a military analyst at the US Army's Soviet Army Studies Office, wrote his account for the Combat Studies Institute at Fort Leavenworth, Kansas, (published as *Leavenworth Paper No. 17*) in 1989. This extract is reproduced by permission of Colonel David M. Glantz, editor of *Slavic Military Studies*. (formerly *The Journal of Soviet Military Studies*). The photographs were provided by Lars Gyllenhaal of Rossvik, Sweden, who has also written most of the captions.



# SOVIET VICTORY IN THE ARCTIC

By Major James F. Gebhardt

On October 7 1944, a Soviet combined-arms force of 97,000 men of the Karelian Front launched an offensive against the German XIX. Gebirgs-Armee (Mountain Corps), numbering some 56,000 men, defending in prepared positions on Soviet territory north-west of Murmansk. Assisted by sea, air, and land forces of the Northern Fleet, the Soviet 14th Army defeated the German forces in a three-phased, 24-day campaign. Soviet troops captured the Finnish town Petsamo on October 15, and the Norwegian port Kirkenes on October 25. The Petsamo-Kirkenes Operation, as the Soviets have named it, was the 'tenth crushing blow' of 1944, one in a series of strategic offensive operations conducted by Soviet armed forces that year. It is also the only large-scale joint and combined-arms operation conducted on arctic terrain in the history of warfare.

1944 was a decisive year on the Soviet-German front. From the Baltic to the Black Sea, from January to August, Soviet forces drove the armies of Germany and its allies back toward the pre-war German frontiers. All of these operations were conducted in accordance with the strategic military-political goals expressed by Joseph Stalin on May 1, 1944: the clearing of all Soviet territory of German occupation, the re-establishment of the Soviet Union's national borders along the entire line from the Barents Sea to the Black Sea, the pursuit and destruction of the wounded German army, and the liberation of the people of eastern Europe from German bondage.

On the Soviet-German northern flank, the Soviet army launched an offensive south of Leningrad, which by early March had driven

German Heeresgruppe Nord westward to the area of the pre-war borders of Estonia and Latvia. On June 10, the Red Army opened an offensive against Finnish forces north of Leningrad, and quickly captured Vyborg, thereby threatening the capital, Helsinki. When the Finnish military command transferred forces from southern Karelia to meet this threat, forces of the Soviet Karelian Front under General of the Army Kirill Meretskov attacked northward and westward out of Soviet Karelia, advancing to the area of the 1940 Soviet-Finnish border by early August. Finland, its very existence threatened by the Red Army, sued for peace, and began serious negotiations with the Soviets on August 25. On September 4, the two sides signed an armistice, the terms of which required Finland to expel or disarm all German troops still on her soil by September 15.

Finland's withdrawal from the war left the German 20. Gebirgs-Armee, commanded by Generaloberst Lothar Rendulic, in a precarious position. These forces, which were located in northern Finland both south and north of the Arctic Circle, had performed an important strategic mission since their insertion into the theatre in 1941. Their first major offensive was launched out of Norwegian territory exactly a week after Operation

'Barbarossa' was begun in Poland. It was directed at the Soviet port of Murmansk, but was halted by determined Soviet resistance only 30 miles west of Murmansk in October 1941. The German forces dug in, and over the next three years continued to threaten Murmansk, while at the same time extracting strategic ores from nickel and iron mines in the area, and securing the land flank of air and naval bases in northern Norway which were important in the war against Allied convoys.

With Finland's withdrawal from the war, General Rendulic took measures to protect his force, and began to withdraw it farther north into Finland (Operation 'Birke'), with a view toward the eventual evacuation of his entire army into Norway (Operation 'Nordlicht').

Operation 'Birke' commenced on September 6, 1944, and proceeded without major interruption by either Finnish or Soviet forces. Operation 'Nordlicht', however, was approved by Adolf Hitler only on October 3, and had not yet begun when the Soviet forces of Meretskov's Karelian Front launched the Petsamo-Kirkenes Offensive on October 7.

**Evidence of the Second World War is still very visible today in the north-western parts of Murmansk oblast (county). In contrast to the cleared fields of Normandy, here the paraphernalia of warfare abound due to the fact that these areas are very sparsely populated, not cultivated at all, and are difficult to enter. In this photograph taken on the tundra between the Titovka and Petsamo rivers, the following can be clearly identified: the helmets are Soviet; there are both German and Soviet hand-grenades; a German wooden sign reads 'Bunker 6'; and the remains of a Soviet (?) rifle is resting on what is probably a mine of Soviet manufacture. (Sergey Khitrov).**

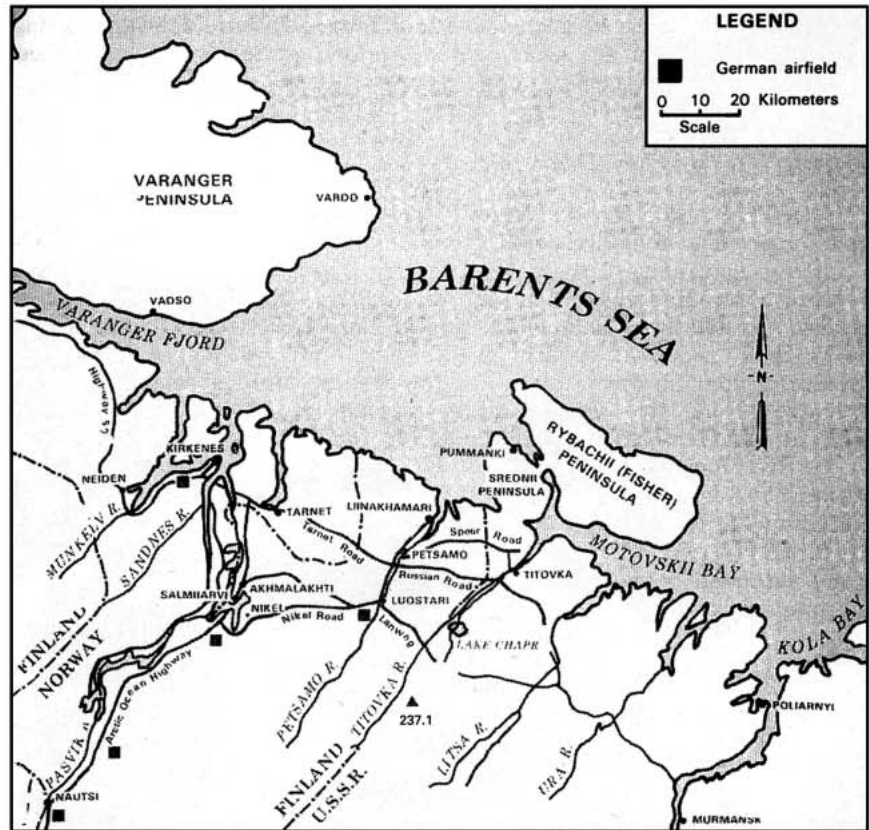
## WEATHER AND TERRAIN

The area of operations lies between 69 and 70 degrees north latitude, about 200 miles north of the Arctic Circle. Strong moist winds blow inland from the cold but unfrozen Barents Sea. In October, the normal temperature range is -5 to +5 degrees Centigrade (23-41 degrees Fahrenheit). Frequent precipitation falls as snow or a mixture of snow and rain. Gulf stream air meets colder arctic air, resulting in frequent heavy fog. Hours of daylight decrease from 13.5 on October 1 to 10 on October 30. At this time of the year, the sun traverses a low arc across the southern sky. The coastal terrain is primarily tundra, interspersed with hills of barren rock, covered by moss and lichen. Farther inland, steep rock-strewn hills rise to elevations of up to 630 metres (1,900 feet) above sea level. Hundreds of streams flow into scores of swamps and lakes, which are drained by north-eastward flowing rivers. Vegetation consists of scrub trees and heavy low bushes, permitting clear fields of observation and fire from surrounding elevations. The ground is not frozen in October, and cannot support vehicular traffic, except on roads.

The existing road network was thus of great significance for the conduct and support of military operations by both sides. The Germans used two main supply routes, Highway 50 along the Norwegian coast to Kirkenes, and the Arctic Ocean Highway northward from Rovaniemi to Petsamo. Secondary roads connected these two main roads from Kirkenes south to Nikel and east to Petsamo. Trunk roads extended eastward from the Arctic Ocean Highway into the German forward defensive positions. On the Soviet side a single main supply route led from Murmansk north-westward to the rear of the Soviet defensive positions. The Soviets made concerted efforts to construct lateral routes in the summer of 1944. There were no roads connecting the Soviet and German defensive sectors. The entire three-week battle would thus hinge on both sides' attempts to exploit the road net for their own operations, while at the same time denying its use to the enemy.

## GERMAN DEFENSIVE DISPOSITIONS

The maneuver forces of the German XIX. Gebirgs-Armee-korps consisted of four divisional groupings. The 210. Infanterie-Division fortress battalions were widely scattered along the Norwegian coast in relatively immobile coastal defence positions. Divisionsgruppe van der Hoop held the northern flank from Petsamo Bay to the mouth of the Titovka river. The 6. Gebirgs-Division guarded the strongly fortified Litsa front from the Titovka river mouth south and west to Lake Chapr, and the 2. Gebirgs-Division defended



**The battle was fought across one of the most inhospitable terrains on earth. The tundra could not support vehicles which were limited to the roads of which there were few: only two on the German side and one on the Soviet.**

in strong points in front of the Titovka river south to Hill 237.1. Due to the nature of the terrain and the forces available, the XIX. Gebirgs-Armee-korps commander did not establish defensive positions south of Hill 237.1, leaving his right flank vulnerable.

The XIX. Gebirgs-Armee-korps was a formidable fighting force. Its units were at or near full strength in regular personnel, and were well-stocked with ammunition and provisions. They were, however, deficient in transport, and could not move themselves without external support. They had been stationed in this theatre for three years, and were thoroughly acclimatised to both weather and terrain, though somewhat inexperienced in large-scale or intense combat operations.

The mission of the corps was to defend its position while thousands of tons of stockpiled supplies were evacuated from Petsamo

and Kirkenes. The corps defence was based on a strong-point system (Stützpunktlinie), consisting of three belts of positions. The first belt was occupied, the second and third were prepared for use as needed. German units selected dominating hilltops on which they constructed covered bunkers, firing points, trench systems, ammunition and supply caches, and command posts. Each strong point was surrounded by barbed-wire obstacles and minefields, with 360-degree observation and fire. Although the numerous gaps between strong points were covered by fire and observation, they still constituted a major weakness in the defensive system, and German units were constructing intermediate positions in the days before the Soviet offensive. From his own tactical intelligence reports, the German corps commander, General Ferdinand Jodl, was aware of Soviet offensive preparations.



Lars Gyllenhaal comments that 'there are really very few places that can be photographed "then and now" because very little fighting took place in urban areas and the landscape of the tundra is virtually devoid of any recognisable features.



Also the Russian parts of the battlefield are still restricted to foreigners and difficult to enter, let alone can one move about freely.' These pictures by Sergey Yesenko show the remains on the front by the Rybachii Peninsula



The main objective of Gebirgskorps Norwegen in June 1941 was Murmansk, with its year-round ice-free port and railway to central Russia. In spite of the proximity to Murmansk from the starting point around Petsamo (100 kilometres as the crow flies), the German troops only advanced half-way to the city

during the summer of 1941. The Luftwaffe bombed Murmansk repeatedly from the start of the war in late June 1941 until the Petsamo-Kirkenes Offensive in late October 1944. This panorama shows what the city looked like in 1942. (Museum of the Red Banner Northern Fleet).

#### SOVIET PLANNING AND PREPARATION

Soviet planning for an offensive operation to clear the Far North began in February 1944, when General Meretskov was called to Moscow to receive command of the Karelian Front from Stalin. Meretskov was available — his Volkhov Front had just been dissolved in the shortening of lines. But more importantly, he was experienced in warfare on the northern flank, having commanded Soviet forces in the war with Finland in 1939-40. Additionally, Meretskov was a former chief-of-staff of the Red Army, who enjoyed Stalin's trust and confidence. After receiving conceptual guidance from both Stalin and Stavka (the Soviet High Command), in mid-February Meretskov reported to his new command, accompanied by many members of his Volkhov Front staff. Between February and June, he familiarised himself with the operational situation, co-ordinated with Admiral A. G. Golovko, commander of the Northern Fleet, and prepared his commanders and units for large-scale offensive operations. The period June through August was largely consumed by the Svir-Petrozavodsk offensive on the southern flank of the Karelian Front. As soon as that operation ended, Soviet combat units were rushed northward on the Leningrad-Murmansk railroad to reinforce the 14th Army.

All army ground forces deployed for the operation came under the command and control of the 14th Army, commanded by Lieutenant-General V. I. Shcherbakov. General Shcherbakov had served as a division commander in Meretskov's 7th Army during the Soviet-Finnish war, and was therefore no stranger to the new Front commander. Several infantry formations comprised the maneuver forces of the 14th Army. The 126th and 127th Light Rifle Corps were created in March 1944 by combining naval rifle brigades and a ski brigade under army corps headquarters. The 127th Light Rifle Corps, along with the 99th Rifle Corps and its three rifle divisions, came from combat in the

forests of southern Karelia. The 31st Rifle Corps, with two divisions, had seen recent combat against German units along the Arctic Circle. The 131st Rifle Corps was a new headquarters, but its two rifle divisions had been in the 14th Army since early in the war. All five corps commanders either had recent combat experience under General Meretskov in the Volkhov and Karelian Fronts, or were veterans of the long stalemate war in the Murmansk area. A sixth corps-sized formation was created under the command of the former Front chief-of-staff, for employment on the army secondary axis.

Soviets sources identify at least seven numbered mortar regiments and 17 numbered artillery regiments which were brought

into the Murmansk area to support the 14th Army. The total tube count was 2,100, of which just over half were mortars. Karelian Front also assigned a total of 120 multiple rocket launcher systems to the 14th Army. All these indirect-fire support units were organised into artillery groups, from army down to regiment, with the standard missions of counter-battery, suppression, and destruction. The density of artillery systems firing in support of the rifle divisions on the main axis was at least 95 guns and mortars and 23 multiple rocket launcher platforms per kilometre of front. 140,000 mortar and artillery rounds, and 97 tons of multiple rocket launcher ordnance were set aside for the firing of a two-and-a-half-hour artillery preparation.



Murmansk in 1997 with the same slope in the background with one structure recognisable from the previous photograph: the old radio station on the skyline. The large building to the extreme left is the new Hotel Arktika. According to a widely-spread legend among locals, the German troops of Gebirgskorps Norwegen had planned to celebrate the taking of Murmansk in the wartime Arktika hotel. (Lars Gyllenhaal).



**Improving the air defences of Murmansk — pictured by K. Moyseyev in 1943. Then, the street was Stalin Avenue . . .**

The 14th Army did not have any organic armoured forces, so to support this operation Karelian Front brought in three tank and two artillery units, with a total strength of approximately 110 armoured vehicles, 76 tanks and 34 152mm self-propelled guns. One regiment of tanks was held in army reserve, while all the remainder were parcelled out to the two rifle corps making the main attack. The 131st Rifle Corps commander, Major-General Z. N. Alekseev, further attached the armoured vehicles to his division on the main axis, while the 99th Rifle Corps commander, Lieutenant-General S. P. Mikulskii, formed a mobile group with armour, engineers, and infantry.

Recognising the critical importance of engineer support to maintaining mobility for both combat and combat support units, General Meretskov assembled 29 engineer battalions to support an offensive by eight rifle divisions. These units included divisional battalions, pontoon and bridge construction battalions, and road operating and construction battalions. Although not engineer units in name, the Front also had two battalions of American Lend-Lease amphibious vehicles, one Jeep and the other truck-equipped. The missions of engineer troops were to prepare assembly areas for the army before the offensive, assist the infantry units in achieving breakthrough, insure the mobility of the attacking forces after breakthrough, and support the rapid crossing of water obstacles during the offensive. One engineer brigade and one battalion of amphibious vehicles were attached to each rifle corps on the main axis.

The air forces available to General Meretskov for support of this operation included five air divisions and a command and control apparatus from his own 7th Air Army, an interceptor division from the forces of national air defence, and a bomber division from Stavka reserve. The total air strength represented in these units was 747 aircraft, as opposed to an estimated German air strength of 160 aircraft. The missions for the 7th Air Army were air superiority, interdiction, and close air support. Its commander, Lieutenant-General I. M. Sokolov, attached a mixed air division to each of the two rifle corps attacking on the main axis, and retained control of the remaining units.

The hub of the logistic support for the operation was Murmansk, with its rail and water transport systems and storage facilities. By early October, 17,000 metric tons of

ammunition had been stockpiled, along with 3,000 metric tons of petroleum products. Units had been issued a six-day supply of food and forage, and 14th Army had another one-week supply of food and two-week supply of forage, with still more of each stored in Murmansk. Caps, mittens, winter underwear, blankets, and sleeping bags were issued to the troops, along with thousands of camouflage smocks.

To move the daily requirement of 800 metric tons, the 14th Army and Karelian Front together had seven truck battalions, with over 1,700 tons of lift capability. Other transportation means included one horse and two reindeer companies, with over 650 animals, utility aircraft of the 7th Air Army, and vessels of the Northern Fleet.

The command and control system used in this operation was typical of the latter period of the war. General Meretskov and Admiral Golovko were both subordinated to Stavka, without the intermediation of a Stavka representative. The relationship between Meretskov and Golovko was one of co-ordination and co-operation (*vzaimodeistviia*). The Karelian Front exercised operational command over the 7th Air Army, which was

also subordinated to the Main Air Staff in Moscow for administrative matters. At the top of the Front headquarters was the Military Council, made up of the Front commander, the Deputy Commander for Political Affairs, and the Chief-of-Staff. The main staff contained several directories (*upravlinie*), which had corresponding departments (*otdel*) at the army staff level. The Front special staff comprised the seven commanders of branches and chiefs of services, who also had counterparts at the army level. These special staff officers were deputy Front commanders, with general officer rank. Since there were no other major operations in progress during the month of October, Meretskov and his staff were frequent visitors to subordinate command posts down to corps and division level, exercising personal supervision over the daily course of the battle.

After meeting with Admiral Golovko in early September to discuss the operational plan, in late September General Meretskov submitted his draft plan to Stavka for approval. Stavka accepted the draft with minor adjustments, and on September 29 Meretskov issued the order to his subordinate units.

The 14th Army was to attack with the main effort on the left by the 99th and 131st Rifle Corps, to defeat the 2. Gebirgs-Division and seize the Petsamo-Luostari area by frontal attack. On their left, the 126th Light Rifle Corps would conduct an envelopment of the German right flank, to block the Arctic Ocean Highway west of Luostari and prevent German retreat and reinforcement. On the 14th Army right flank, from Lake Chapr to the east and north, a corps-sized composite force would conduct an economy-of-force operation against the German 6. Gebirgs-Division. On the right flank, a naval infantry brigade would attack across the Srednii Isthmus and another along the coastline west of it, against Divisionsgruppe Van der Hoop, to cut their path of retreat and reinforcement.

Soviet planners calculated an overall Soviet infantry strength advantage of just over 2:1, but deployed their forces to achieve a ratio of over 3:1 on the main attack sector opposite the 2. Gebirgs-Division. In actuality, Soviet planners had miscalculated both the size and the distribution of the German forces facing them, and enjoyed an infantry superiority on the main axis of over 4:1. On October 6, 1944, the 14th Army commander ordered the artillery preparation to begin at 0800 hours on October 7, and the attack at 1030.



**. . . but today it is Lenin Avenue. (Lars Gyllenhaal)**



#### THE BATTLE: PHASE ONE (OCTOBER 7-15)

The poor weather conditions which prevailed on October 7 favoured the attacking Soviet infantry, but precluded participation of close air support in the artillery preparation and the accurate adjustment of fires. The first-day's objective on the main axis was to break through the German initial defensive positions and reach the Titovka river, a distance of 9-10 kilometres. By the end of the day, the 131st Rifle Corps on the right had secured an infantry bridgehead on the west bank. The 99th Corps, however, met determined resistance from several German strong points, and did not reach the river line until the evening of October 8. The fighting these first two days was characterised by repeated and bloody infantry assaults, supported by mortars and artillery, against German positions on steep rocky hills. While one regiment attacked up the face of a German strong point, another infiltrated around the flank and attacked the same strong point from the rear. German units which stayed in their positions too long were cut off from withdrawal routes and then destroyed in close combat.

On October 8, while the 99th Corps was still fighting to gain control of the east bank

The German magazine *Signal* published this photograph in March 1943, the original caption saying that it showed Organisation Todt (OT) workers building a road not far from Murmansk 'often under enemy fire'. (OT war correspondent H. E. Blenck)

of the river in its sector, the 131st Corps turned to the north-west and drove forward along the seam of the 2. and 6. Gebirgs-Divisions. To reinforce the success of this corps, General Meretskov transferred to it the uncommitted rifle division from the 99th Corps' second echelon, in exchange for the heavily-committed rifle division on the 131st Corps' left flank. This enabled the 131st Corps to sustain its forward momentum. As the corps advanced, however, it began to move beyond the range of its supporting artillery, which was still in initial firing positions, and could not displace forward because of the absence of roads.

While the two corps on the main axis were achieving breakthrough, the 126th Light Rifle Corps on the army left flank was moving around the German right flank, observed but unopposed. German message traffic for October 8 gives some indication that at the 20. Armee there was concern for a deep envelopment of the south flank with perhaps

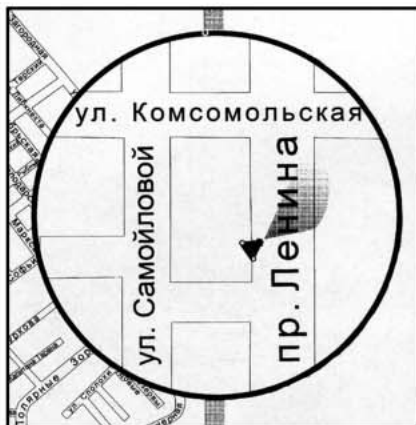
a thrust toward Nickel. Despite these concerns, no force was sent out to fix or engage the Soviet light infantry corps.

Fearing collapse of the long-held 6. Gebirgs-Division position as a result of the Soviet breakthrough, late in the afternoon of October 8 General Rendulic, commander of 20. Armee, gave permission to General Jodl, commander of XIX. Gebirgs-Armee, to begin withdrawal of the 6. Gebirgs-Division to positions along the Titovka river. The same order authorised 2. Gebirgs-Division to withdraw to positions east of Luostari. XIX. Gebirgs-Armee was to hold these new positions for 14 days, so that supplies could be evacuated from storage facilities throughout the area.

On October 9, to hasten the construction of a road connecting the existing Soviet and German roads, the Soviets consolidated engineer assets, and attached to them uncommitted infantry and artillery units. Good flying weather enabled Soviet air

The remains of the Speer Road (see map page 2), still in a remarkably good state of repair in spite of heavy post-war use by the Soviet Army. (Sergey Khitrov)





**Right:** One of a nice series of prints available in Murmansk, with a detailed sketch plan on the reverse (above) showing where each shot was taken. These street repairs are on Stalin Avenue in 1944 (K. Moyseyev)



forces to fly over 1,000 sorties, which for some infantry units was their only fire support. General Jodl reported on this day that his wire communications had been thoroughly destroyed by aircraft ordnance, disrupting the command and control of his units. The Soviet offensive, meanwhile, continued unabated, driving toward Luostari (99th Rifle Corps) and Petsamo (131st Rifle Corps).

Informed by Soviet air reconnaissance that the 6. Gebirgs-Division was beginning to withdraw from its positions, late on October 9 General Meretskov ordered his right flank grouping under Lieutenant-General B. A. Pigarevich to go over to the attack. He also signalled Admiral Golovko to initiate his ground and amphibious operations. Between 2330 hours, 9 October, and 0150 hours, 10 October, approximately 3,000 naval infantrymen of the 63rd Naval Infantry Brigade went ashore in an amphibious landing west of the Srednii Isthmus, opposed only by German shore battery fire. Aided by a smoke screen and counter-battery fire from their own shore-based artillery, the naval infantrymen quickly moved inland toward their objectives.

At 0330 hours, 10 October, artillery units of the Northern Defensive Region began firing a 47,000-round, 90-minute artillery preparation against the German positions along the Srednii Isthmus. At 0500 hours, Soviet troops of the 12th Naval Infantry Brigade launched their attack across minefields covered by ten inches of fresh snowfall. By midday, elements of the two Brigades were linking up behind defeated German positions, and by nightfall German forces of Divisionsgruppe van der Hoop were retreating westward along the Titovka-Porovara road.

Similar gains were made on the main axis to the south. The 126th Light Rifle Corps was in its blocking position by 0800 on October 10, and defeated every attempt to dislodge it over the next three days. On the Luostari axis, the 99th Rifle Corps continued to attack without artillery support along the road to Luostari, making slow progress.

The 131st Rifle Corps managed to cut the road behind the 6. Gebirgs-Division around noon, October 10, but lacking artillery fire support and running out of ammunition, had to withdraw the next morning. In the early afternoon of the 10th, the 20. Armee chief-of-staff ordered that the nickel mine and processing facilities at Nikel be destroyed. At 1600 hours, the XXXVI. Corps chief-of-staff was told to make preparations for the commitment of his 163. Gebirgs-Division to the XIX. Gebirgs-Armee corps sector.

During the night of October 10/11, all of the 99th Rifle Corps' supporting artillery moved forward across the Titovka river on the single road leading to Luostari, 13 regiments total. Because none of the artillery units could deploy off the road and across the corps front, only half of it could fire on enemy positions. Four regiments of tanks and self-propelled guns also crossed the river, resulting in enormous congestion on the road. The armour crawled forward on a front of one vehicle, supporting the rifle division advancing along the road. The other two divisions attacked north and south of the road, cross country. By nightfall on October 11, the division on the 99th Rifle Corps left flank had linked up with the 127th Light Rifle Corps south of Luostari, while the other two divisions stalled in front of 2. Gebirgs-Division positions just east of the settlement. On October 12, the 99th Corps attacked Luostari from the south, east, and north-east, capturing the village and road junction by noon. The Arctic Ocean Highway, which had been blocked by the 126th Light Rifle Corps on the morning of October 10, was now firmly in Soviet hands. The single route of withdrawal for all German units in and around Petsamo was the dirt road leading west from Petsamo to Tarnet.

This fact did not escape the notice of the Army commander, General Shcherbakov. He ordered several tons of supplies to be

delivered by air to the 126th Corps during the night of October 11/12, and on the 12th sent one Brigade of light infantry 15 kilometres northward to cut the Tarnet Road. This brigade reached the road and established a blocking position during the night of October 12/13.

On the northern flank, at dawn on October 12, a 195-man naval infantry reconnaissance detachment attacked and neutralised the German shore batteries guarding the entrance to Petsamo Bay. That evening, an amphibious force of more than 600 men landed in the harbour at Liinakhamari, and defeated the German garrison by noon on the 13th. The 12th and 63rd Naval Infantry Brigades made contact with 131st Rifle Corps units south of the Titovka-Porovara road, and the Soviet units pursuing the German 6. Gebirgs-Division were closing up from the east. At 1500 hours on October 13, General Jodl requested instructions from 20. Armee. After some delay, army headquarters issued an order for XIX. Gebirgs-Armee to open the Tarnet Road and establish new battle positions just inside Norwegian territory.

While German rearguards fought delaying actions against Soviet forces attacking Petsamo from three directions, 2. Gebirgs-Division troops were breaking out to the west, overwhelming the Soviet light infantry blocking force. On October 14, remnants of



Lars Gyllenhaal took the matching shot for us in 1997.



**Left:** Two Bell P-39 Airacobras, of which more than half the total built — 4,773 — were given to the USSR under the American Lend-Lease programme, and flown both by Soviet army and naval air forces. **Right:** Here, Navy pilot Sorokin (right)



appears to be recounting an encounter with the enemy. The aircraft belong to the 2nd Aviation Regiment of the Northern Fleet, the photograph being taken sometime in 1943. (Museum of the Red Banner Northern Fleet)

the 2. and 6. Gebirgs-Divisions, and Divisionsgruppe van der Hoop, were able to withdraw westward into Norway. By Soviet estimates, 15-18,000 German troops escaped along this route, though the actual total was probably higher. The first Soviet troops entered Petsamo from the east at 2200 hours on October 14, and cleared the settlement in house-to-house fighting by 0500 on the 15th.

In nine days of combat, the Soviet forces had achieved a breakthrough on the main axis, advanced from 35 to 60 kilometres across extremely difficult terrain, crossed three rivers, landed two amphibious assaults, and captured three built-up areas. Estimated German troop losses for this phase were approximately 6,000. German equipment losses were also severe. Soviet losses for the same period are not disclosed.

The attackers were exhausted, however. Many units had wholly used up their supplies of food, fuel and ammunition, the existing road network being entirely inadequate to maintain the needed logistic support. Even the shipping of 86 tons of supplies by air to the Luostari airfield did not alleviate the supply problem. To enable the troops to take a much-needed rest, and the logistic system to catch up, the 14th Army commander ordered a three-day pause in combat operations.

Both sides used this pause to reconstitute, reorganise, and resupply. On October 15, General Rendulic, 20. Armee commander, met with General Jodl, the XIX. Gebirgs-Armee commander, and Generalleutnant Karl Ruebel, 163. Infanterie-Division commander, at the latter's command post. Rendulic moved the battered 2. Gebirgs-

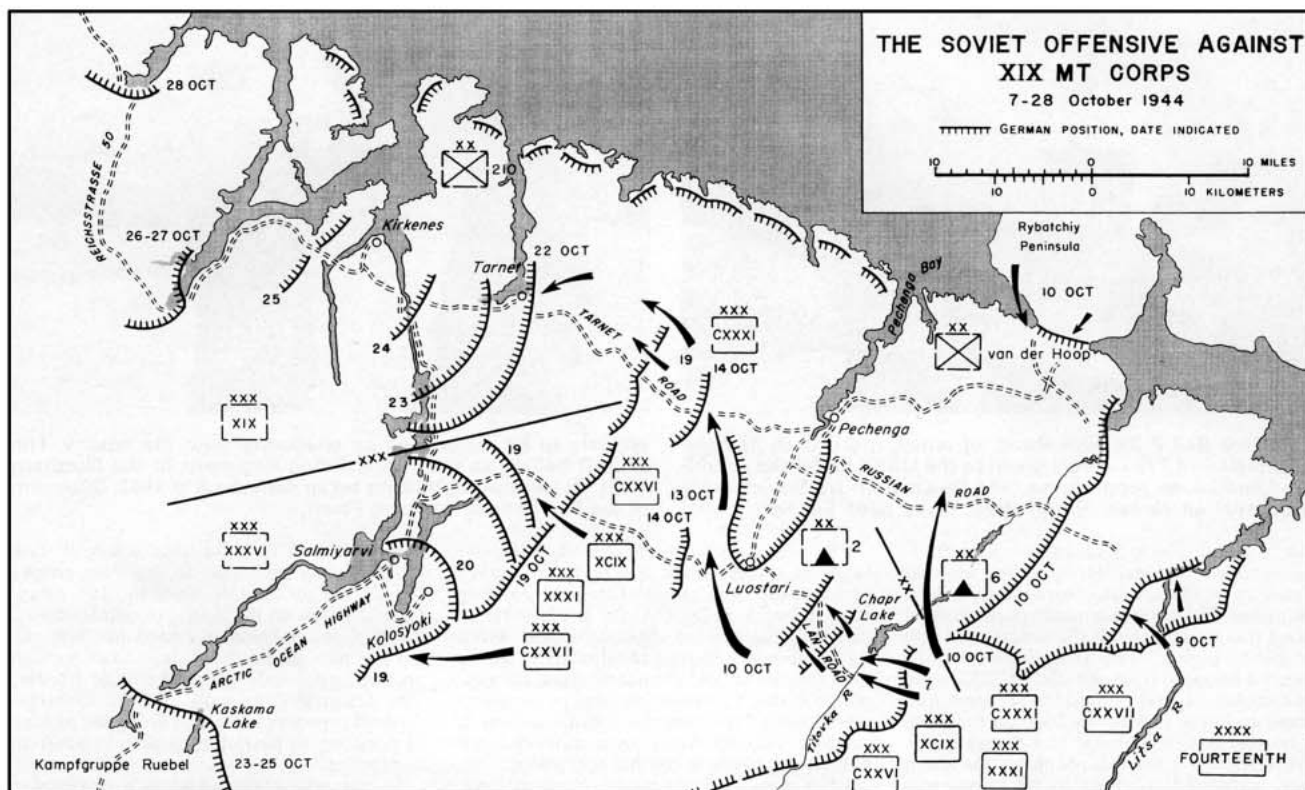
Division south to Salmiärvi, where it took up defensive positions to the east on the Luostari-Nikel road, south of the 163. Infanterie-Division on the Arctic Ocean Highway. The 6. Gebirgs-Division established a blocking position across the Tarnet road on high ground just inside the Norwegian border. The designated mission of XIX. Gebirgs-Armee was to defend Kirkenes as long as possible, to permit continued evacuation of supplies.

In response to the withdrawal of German troops into Norway, General Meretskov requested permission from Stavka to cross the Norwegian border. When Stavka granted this request on October 18, the 14th Army brought all five rifle corps up on line into one echelon to continue the offensive on multiple axes.



Reindeers were commonly used instead of tractors to pull bombs and supplies on the airfields in the Kola Peninsula. In 1944, the Northern Fleet's aircraft carried out more than 9,000 sorties against German lines of communication to try to prevent the Germans reinforcing the area with shipping convoys.

Soviet sources claim 100 ships sunk and 71 damaged by the 2,420 bombs and 201 torpedoes dropped. German convoys along the northern coast of Norway ceased in November 1944 after a total loss of 280 ships. This MiG 3 is at Vaenga, by today's Severomorsk airfield. (Museum of the Red Banner)



## THE BATTLE: PHASE TWO (OCTOBER 18-22)

General Shcherbakov, 14th Army commander, designated the main axis of his renewed offensive to be the two roads leading west from the Luostari area, one through Nikel and the other through Akhmalakhti. The roads came together west of Nikel, where traffic could turn either north toward Kirkenes or south toward Ivalo. On the southern loop he placed his second-echelon 31st Rifle Corps, with the 127th Light Rifle Corps on its left flank. Their mission was to capture Nikel and cut the north-south main supply route west of that settlement. The 99th Rifle Corps moved from the Petsamo area into attack positions facing the northern loop of road, Arctic Ocean Highway, with the 126th Light Rifle Corps on its right. Their mission was to defeat the German forces defending that axis and also prevent lateral movement along the north-south road at the Norwegian border. Shcherbakov reinforced the 131st Rifle Corps with a third rifle division and ordered the corps to attack into Norway along the Tarnet Road to defeat the 6. Gebirgs-Division. The 30 armour and artillery units were redistributed among the three rifle corps for employment along the road axes, and engineer units were configured for road-clearing and water-crossings.

While the 131st Corps was positioning itself to attack, just before dawn on October 18 the Northern Fleet landed a 500-man force at two points along the coast just east of the Norwegian border. Their mission was to clear the coastline of German shore batteries, lighthouses, signal and observation stations, and small garrisons, in support of the 131st Corps. The corps crossed the border at 1350 hours, with two divisions forward and one back, and over the next five days advanced to Tarnet, overcoming moderate resistance by the 6. Gebirgs-Division.

The 99th Rifle Corps, with two divisions forward and one back, fought a series of engagements along the road on their axis. The corps had to reduce each German defensive position with co-ordinated infantry attacks from the front and flanks, supported by one or two tanks or self-propelled guns and indirect fire. Close air support flew strike

missions against several German artillery units on October 20. The corps finally reached the Norwegian border at the Pasvik river by evening October 22, and put infantry units across on log rafts and amphibious Jeeps. The supporting 126th Light Rifle Corps did not meet significant opposition until it approached the shore of Lake Klistervatn on October 21, when it met and defeated fleeing elements of a German bicycle reconnaissance brigade.

The 31st Rifle Corps moved forward out of the 14th Army rear during the night of October 16/17, and occupied start positions west of Luostari by the morning of the 18th. The success of a regimental-sized attack that morning led General Shcherbakov to believe that the enemy was withdrawing rapidly, and

he ordered the 31st Corps commander to capture Nikel by the end of October 19. Major-General M. A. Absaliyev organised his two divisions into two echelons, with only two of his rifle regiments deployed to make contact. The lead division made slow progress on October 19 and 20 against German strong points constructed on over-watching terrain. The Germans had incorporated a number of demolitions and obstacles into their defences, which forced long delays in the Soviet advance. General Absaliyev attached one rifle regiment from his second-echelon rifle division to the engineers to assist in repair of the road.

While the lead rifle division was fighting for each meter of road, one of its regiments and the entire 127th Light Rifle Corps were



The Cobra Search Group have traced many relics and remains on the battlefield. This German shelter stands beside the Titovka river, close to Udarnaya Hill.

advancing steadily cross-country south of the road, and a battalion was approaching Nikel in similar fashion from the north-east. By midnight on October 20, one battalion of light infantry had cut the main supply route south-west of Nikel. This force ambushed two German staff cars, one of which carried the commander of the 2. Gebirgs-Division, Generalleutnant Hans Degen, who escaped injury. Early the next morning, the Germans attacked and eliminated the Soviet blocking force, clearing the way for the withdrawal of units still fighting east of Nikel.

On October 21, General Shcherbakov ordered General Absaliyev to commit his second-echelon rifle division, one regiment to support the division attacking on the road axis, and one regiment south of the road to capture the airfield south of Salmiari. The 31st Rifle and 127th Light Rifle Corps units fought their way into Nikel during the night of October 21/22, and controlled the settlement and mineworks by mid-morning on the 22nd. The German rearguard elements of the 2. Gebirgs-Division withdrew to the south-west along the Arctic Ocean Highway, destroying bridges and roadway behind them. The regiment in search of the German airfield had passed to the south of it, and was continuing its westward cross-country movement toward the main road. General Absaliyev ordered his second-echelon rifle division to pass through to the first echelon, and gave all available troops of the old first-echelon rifle division over to the corps engineer for road repair tasks.

By the evening of October 22, Soviet units of the 131st Rifle Corps in the north were standing on the south-east shore of Jar Fjord, oriented west toward Kirkenes. In the cen-



**A German 7.5cm Gebirgsgeschütz Model 36 still guarding the Titovka river by Ortler Hill. The total weight of the Geb.G36 mountain howitzer was 750kg and it could be broken down into 11 pack-loads. Both high-explosive and hollow-charge projectiles could be fired from this weapon. (The Cobra Search Group)**

tre, the 99th Rifle Corps had crossed the Pasvik river and established infantry bridge-heads on Norwegian territory. In the south, the 31st Rifle Corps was poised to pursue southward along the Arctic Ocean Highway. The Soviet forces attacking from the east and

the impassable terrain to the west forced the German XIX. Gebirgs-Armee-korps units to withdraw northward toward Kirkenes and the Norwegian coast road, or south-westward along the Arctic Ocean Highway toward Nautsi and Ivalo.



**Remote . . . desolate . . . and forgotten. A Wehrmacht steel helmet left untouched for half a century, pictured by Sergey Khitrov.**



**The bridge destroyed by the Germans across the River Pasvik at Elvenes, five kilometres south-east of Kirkenes on Bek Fjord. Soviet forces were unable to cross the fjord using makeshift rafts but two companies of one rifle regiment managed to get across some 1500 metres further south where the gap narrowed to 150-200 metres.**

#### **THE BATTLE: PHASE THREE (OCTOBER 23-30)**

Pursuant to General Meretskoy's order to pursue the German forces in both directions, Shcherbakov and his staff elected to attack northward with three corps and southward with two. The 131st Corps from the east and the 99th Corps from the south would mount a co-ordinated assault on the 6. Gebirgs-Division and Kirkenes garrison. The 126th Light Rifle Corps, meanwhile, was to march cross-country west and north to Munkelv, and there cut Highway 50, the sole land escape route from the Kirkenes area. Admiral Golovko's naval forces were poised to interdict any German attempt to slip into or out of Varanger Fjord, while his naval infantry prepared for additional tactical amphibious landings along the coast.

On the morning of October 23, the first of two landings came ashore in Kobbholm Fjord. At the same time, 131st Corps units attacked westward from the Tarnet area. That night, an entire rifle division minus its artillery crossed Jar Fjord on American-made amphibious trucks, meeting little resistance between the north shore of the fjord and the settlement of Jakobselv, across the water from Kirkenes, on October 24. Small groups of tanks and multiple rocket launchers stayed on the road from Tarnet to Kirkenes and supported the attack of another division on the latter axis. That division fought its way forward to Bek Fjord on the 24th, and established a bridgehead on the west bank 1500 meters south of the bridge which the Germans had destroyed. According to Soviet sources, in this two-day period German artillery fired 45,000 rounds at the 131st Rifle Corps.

In the 99th Rifle Corps sector to the south, Soviet engineers built a pontoon bridge at Holmfoss, and crossed men and vehicles in rapid order. One rifle division set up a screen line to the west, while the other two attacked northward, supported by tanks and artillery on the road. By evening on October 24, these two divisions were only ten kilometres south of Kirkenes, fighting through the iron-ore mines located there.

A minor crisis had developed, meanwhile, in the 126th Light Rifle Corps. When it was supposed to be moving westward cross-country to establish a blocking position on Highway 50, it was still sitting in the Akhmalakhti area, awaiting delivery of supplies of food and ammunition. At 1600 hours on October

24, General Shcherbakov ordered the 10th Guards Rifle Division of the 99th Rifle Corps to detach a regiment for this mission. The ensuing delay in Soviet troops reaching the Munkelv area enabled many German units to escape.

By the evening of October 24, Soviet air reconnaissance detected German columns leaving Kirkenes going west along the highway. In the port itself, the Soviet units could hear and see large explosions and fires, indicating destruction of the city and the supplies stockpiled there. Before dawn on October 25, Soviet 131st Rifle Corps units forced a crossing of Bek Fjord east of the city, while 99th Corps units pressed from the south. By 1200 hours, the last organised resistance of the garrison was defeated.

While Kirkenes was being assaulted, the naval infantry made their last tactical landing, in Holmenger Fjord, before dawn on October 25. These units cleared the coastline of German shore batteries, and by October 27 reached Jakobselv, across the fjord east of Kirkenes. Their landing had virtually no impact on the battle around Kirkenes. The infantry of the 126th Light Rifle Corps

finally reached the Neiden area early on the 27th, and fought the last rearguard units of the withdrawing Germans. General Meretskoy halted the advance on this flank, allowing only a reconnaissance element to follow the German forces another 116 kilometres to Tana Fjord, which was reached on November 13.

On the southern axis, on October 23 General Shcherbakov ordered the 31st Rifle Corps to attack along the axis of the Arctic Ocean Highway, and the 127th Light Rifle Corps to conduct a parallel pursuit on the Norwegian side of the border. General Absaliyev of the 31st Corps planned an aggressive pursuit along the road, with infantry regiments from his first-echelon division attacking straight ahead and into the flanks of German rearguard units. He gave all his second-echelon infantry units over to the corps engineer to assist in repair of the road immediately behind the first echelon, to enable artillery to be brought forward in support of the attack. All the corps' tanks and self-propelled artillery were left behind in the Nikel area, it being judged too difficult to ensure their mobility.

The offensive along the road was immediately delayed by the Germans' demolition of two bridges across rivers at the south end of Lake Kuetsiarvi. While engineer troops and their attached infantry struggled to rebuild these bridges in the middle of a swamp, two regiments of the lead division moved cross-country without supporting artillery, one of them capturing the airfield and the other reaching the main road by the evening of October 23. The lead regiment advanced southward another 10-15 kilometres on the 24th, but was halted at Mount Kaskama by German rearguards. While this regiment prepared a co-ordinated frontal and flank attack on this position, engineers continued to build bridges and repair the road. On the morning of the 25th, heavy vehicles were finally able to cross, and artillery was towed forward to support the combat.

The 127th Light Rifle Corps crossed over into Norway on log rafts that same morning, but did not hurry to join the Kaskama battle on the west flank. By 1500 hours, meanwhile, a regiment (minus one battalion) had infiltrated around the German right flank and lodged itself behind the German position astride the road. The German defenders counter-attacked this position several times, finally breaking out at around 1800 hours. When Soviet troops swept over the top of Mount Kaskama on the night of October 25/26, the German defenders were gone.



**The replacement bridge photographed by Lars Gyllenhaal.**



**Above: A Soviet soldier by the still-smouldering ruins of Kirkenes, Norway's major border town. The town and much of Finnmark county was systematically destroyed by the retreating German forces. Comparison below by Oyvind Ravna.**

On October 26, Soviet units pressed forward another 20 kilometres, overrunning the German airfield at Maikatola. On the 27th, German rearguards halted the pursuing Soviet infantry just east of Nautsi. While the Soviet commander delayed his attack in order to bring up artillery support, German engineers destroyed the dam and hydro-electric station some 12 kilometres upstream. On the morning of the 28th, the Soviet division commander executed a co-ordinated frontal and flank attack on the German position, reaching the destroyed dam and hydro-electric station the next day.

On October 30, the 14th Army ordered the 31st Rifle Corps to occupy defensive positions east of Lake Inari, with forward positions south-east of the lake at Mustola. Upon occupation of Mustola, a special detachment

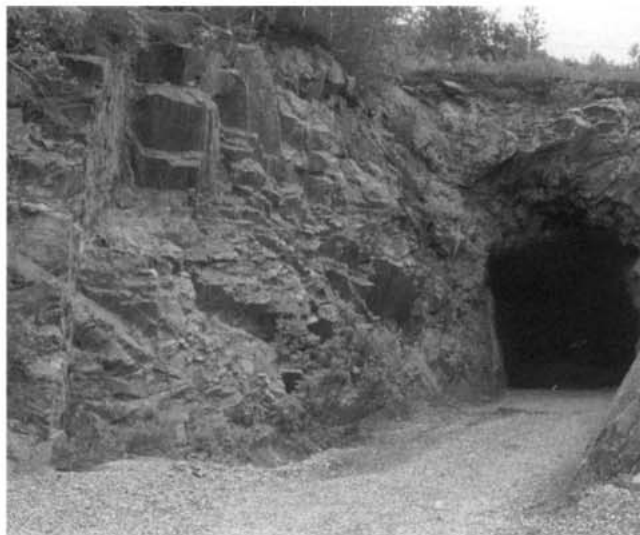
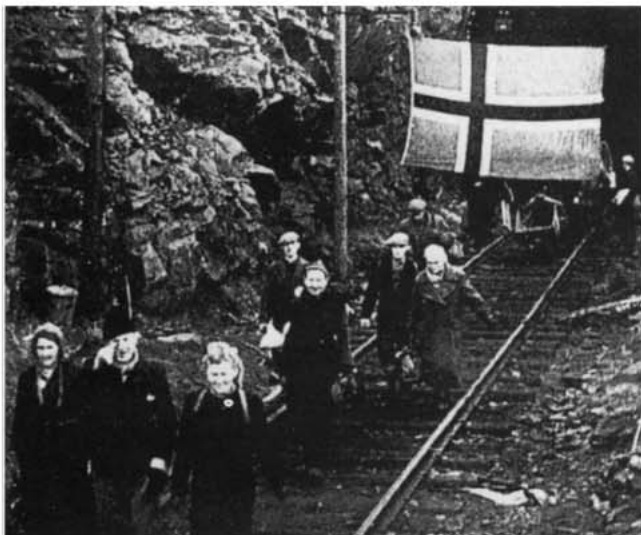
was to be created to drive southward and make contact with the Finnish Army at Ivalo. German rearguards positioned astride the road at Virtaniemi were fixed by one attacking regiment, while two other regiments manoeuvred cross-country over terrain the Germans believed impassable. German units were driven out of their positions by nightfall on October 31, and similar actions occurred on November 1 and 2, resulting in the seizure of Mustola by Soviet units by midday on the 2nd.

The main forces of the 31st Corps went over to the defence in their specified positions, while a forward reconnaissance detachment followed the withdrawing Germans to Ivalo, where on November 5 it made contact with Finnish troops. The German forces withdrew north-westward

through Finnish territory back into Norway. During ten days of active pursuit operations (October 23 to November 2), the 31st Corps had advanced approximately 150 kilometres.

Moscow saluted the men and units of the Karelian Front and Northern Fleet three times: on October 15 after the capture of Petsamo, on October 25 after the liberation of Kirkenes, and on November 1 after Pechenga oblast (county) had been cleared of German troops. Aided by Northern Fleet units, the Karelian Front had successfully concluded a joint and combined-arms operation of unprecedented size on arctic terrain. The German forces lost over 9,000 men killed, wounded, or missing, and thousands of tons of supplies which were destroyed or fell into Soviet hands. Soviet casualties are set at 15,773.





### SPECIAL OPERATIONS

Both the Karelian Front and the Northern Fleet employed special operations forces in support of their ground offensive and amphibious landings. The special operations forces (Spetsnaz) of the Karelian Front were formed in July 1944, from troops of an assault combat engineer brigade, for operations deep in the German rear. The detachments became Front assets, and trained and operated under the command and control of the Karelian Front's Commander of Engineer Troops, Lieutenant-General A. F. Khrenov. In early September, Generals Meretskoy and Khrenov approved a plan for the utilisation of the Spetsnaz detachments in support of the offensive. The plan called for the insertion of three detachments into the German rear area several days before the launching of the offensive. Their missions were to reconnoitre the route of the following light rifle corps around the German right flank positions, conduct detailed and continuous reconnaissance of the enemy and terrain, gain control over the road net, and upon commencement of the offensive assist the main attack by striking enemy communications, destroying men and equipment, mining roads, and demolishing bridges.

The engineer Spetsnaz troops trained rigorously for their mission, studying the terrain, practising ambush techniques, learning to use demolitions and explosives, and conditioning their bodies for the physical rigors of the mission. When they went into enemy-occupied territory, each soldier carried 85-90 pounds of personal and organisational weapons, ammunition, equipment, and rations sufficient for up to 17 days behind enemy lines. Detachments carried light machine guns, sub-machine-guns, anti-tank mines, demolition, sniper rifles, and radios with extra batteries.

The first 133-man detachment departed Soviet lines on September 18, and seven days later lodged itself in an area midway between Tarnet Road and the Arctic Ocean Highway, on the east-west run of the Norwegian border. From this operating base, the detachment maintained surveillance over an area 50 kilometres in diameter, focusing on the German road net. On October 2, a 108-man detachment departed Soviet lines and infiltrated into the area east of Luostari between Lanweg Road and Russian Road, eight kilometres behind the German front line. A third detachment of 49 men set out on the same day and penetrated to a position 12 kilometres north-east of Nikel by October 8.

Several hours before the 14th Army offensive was launched on October 7, the Spetsnaz detachments began active combat operations.

At 1900 hours on the 6th, an element of

**Left: The battle is over. More than 3,000 Norwegian civilians who had hidden themselves to avoid the forced German evacuation chose to stay for days and in some cases for weeks in the mines of the Björnevatn mining complex. Several people died in the dark and damp environment and about ten children were born here. At 2 a.m. on the morning of October 25, the first Soviet soldiers appeared with an officer at the entrance of the main tunnel. They told the civilians that their town was free and the Norwegians responded by singing their national anthem. (Forsvarsmuseet) Right: Oyvind Ravna pictured the cave entrance for us as it is today.**

the second detachment attacked a German outpost 14 kilometres east of Luostari on Lanweg Road. Over the next several days, all three detachments executed several ambushes and attacks against German columns, telephone lines, bridges and isolated units. By October 10, the 20. Armee was aware of the size and location of the first detachment, indicating in a report that 'a 150 to 200-man element with a sabotage mission' was located in the area between Eismeer-Strasse (the Arctic Ocean Highway) and the Tarnet-Kirkenes road. The document later specifically identified this detachment correctly as an element of the '6th Separate Guards Detachment (Sabotage)'. On at least two occasions, according to Soviet sources, Spetsnaz units directed air strikes against

lucrative troop targets. The detachment operating in Norwegian territory was resupplied with ammunition, food, and dry clothing by an airplane parachute drop on October 12.

The second detachment to deploy was the first to link up with advancing forces, on October 12 east of Luostari. The first detachment, still operating behind German lines in Norway, did not come out until the 17th, while both German and Soviet forces were repositioning during the lull between phases of the Soviet offensive. The third detachment came out at the same time.

Aside from its tactical contribution to the overall Soviet success in the offensive, this Spetsnaz action is significant in three other important aspects. First, several entries in



**Such friendly meetings as this one, between Soviet soldiers and Norwegian civilians, actually dominated the scene after the liberation in October 1944. Contrary to what happened in Germany, there are no reports of Soviet soldiers committing rape or similar crimes against civilians in Norway. Second Lieutenant Thor Heyerdahl (later of Kon-Tiki fame) confirmed as much in a BBC broadcast in February 1945: 'It made a great impression on the Norwegians in Sør-Varanger that the Russians let them be. The few remaining houses that were standing after the fighting were not taken over by the Russians. Instead they themselves slept outside in the snow. It was incomprehensible to us Norwegian soldiers. It was quite impressive because the Russians lacked both tents and sleeping bags.' (Museum of the Red Banner Northern Fleet)**

German war diaries corroborate information contained in Soviet secondary sources and memoir accounts. This lends credibility to Soviet accounts of this action, and to Soviet military history in general. Second, a firm engineer base is established for Soviet Spetsnaz operations, which previously have been viewed by Western analysis as having been conducted only by NKVD/internal security forces. Third, these Spetsnaz units were owned and operated by the Front commander, whereas the generally accepted view of Spetsnaz units is that they were tightly controlled by a centralised apparatus in Moscow.

Forces of the Northern Fleet also conducted a special operation. Pursuant to an order from naval headquarters in Moscow to re-establish a Soviet naval base at Petsamo, in late September Admiral Golovko's staff began to plan an amphibious landing at Liinakhamari, the small harbour north of Petsamo in Petsamo Bay. Entrance to Petsamo Bay was controlled by a battery of four German 15cm guns sited on the north shore of Cape Krestovyi (Ristaniemi). These guns had to be neutralised in order for any landing operation to succeed. To accomplish this task the fleet assembled a composite force of naval infantry, consisting of the reconnaissance detachment of Headquarters, Northern Fleet, commanded by Senior Lieutenant Viktor N. Leonov, and the reconnaissance detachment of the Northern Defensive Region, commanded by Captain I. P. Barchenko-Emelianov. Attachments included a team of artillerymen, a group of combat engineers, and an unspecified number of medics and radio operators. The overall commander of the composite force of 195 men was Captain Barchenko-Emelianov.

The composite detachment came ashore at 0100 hours on October 10, their landing area being just west of the main landing of 3,000 men of the 63rd Naval Infantry Brigade. The detachment reported the loss of one of five radios to fleet headquarters, and then began its cross-country march to the south-west. For the next 48 hours, the detachment walked across extremely difficult terrain, characterised by sparsely vegetated, rocky and steep hills, separated by countless streams and lakes. The weather hovered around freezing, with frequent showers of rain or snow. The group rested periodically in rock caves or under the cover of sparse bushes, and finally reached the southern approach to Cape Krestovyi early on the morning of October 12.



**The detritus of war still litters the Arctic battlefield. Above: Ammunition containers are probably of Soviet origin. Below: The remains of a German gas mask canister and a grenade. (Sergey Khitrov)**



At the objective, the detachment split into three groups, one to attack the anti-aircraft battery on the south slope of the cape, the second to seize the strong point in the centre of the cape, and the third to storm the artillery battery on the cape's north shore. In the early morning darkness, the sailors attacked and quickly overwhelmed the anti-aircraft battery and the strong point, but the naval infantrymen could not penetrate the defences of the shore battery. At dawn, the Germans remaining on the cape launched a counter-attack, supported by additional forces landed on the west shore from Liinakhamari. All available German indirect fire support assets were also directed against the Soviet force, causing serious casualties.

The group occupying the anti-aircraft battery positions was forced to withdraw, but took with them the breech blocks of the guns. As the counter-attacking Germans approached the strong point position, Soviet naval close air support aircraft came in and

**This German howitzer has been stripped of many parts but is still easily identified due to its 'scaloped' shielding as a 7.5cm light mountain infantry howitzer (le.GebIG 18). This weapon weighed 440 kg and could be carried by six mules. (Sergey Yeshenko)**



**There are many reminders of the war in Kirkenes itself where several houses stand on German bunkers. (Lars Gyllenhaal)**

restored the situation. Over the next four hours, according to Admiral Golovko, his pilots delivered ten air strikes and several parachute containers of ammunition and provisions. Soviet ground-based artillery from Srednii Peninsula conducted counter-battery fire throughout the day, helping to defeat several German counter-attacks.

By dusk, the Soviet force had retaken the anti-aircraft battery position and adjacent shore, denying the Germans any subsequent landings. The remaining German troops on the cape were pinned down with the crews of the shore battery in their bunkers, unable to employ the guns. There they remained throughout the evening, even as a Soviet amphibious landing force of over a dozen surface vessels entered Petsamo Bay at approximately 2230 hours. Over 600 men were landed in the harbour at Liinakhamari between 2250 and 2400 hours, without interference from the shore battery on Cape Krestovyi.

Before dawn on October 13, Captain Barchenko-Emelianov obtained the surren-



der of almost 80 German soldiers from the gun positions. His men spent the day gathering up their prisoners and equipment, and

their own dead and wounded. That night, the detachment was ferried across the bay into Liinakhamari to help in mopping up operations, which were completed by midday of October 14. In three days of battle, the composite detachment lost 53 men killed and wounded, some 27 per cent of their 195-man force.

This special operation of the Northern Fleet had much in common with the ground forces Spetsnaz action. The men were from elite organisations, which in this case had been in existence and performing operations in the German rear since the late summer of 1941. The operation was controlled by the Northern Fleet commander through his headquarters staff. Air forces of the fleet provided both combat and logistic support to the operation. The force remained viable through to linkup with conventional forces. Captain Barchenko-Emelianov, Senior Lieutenant Leonov, and two enlisted men were awarded the title Hero of the Soviet Union in recognition of their feats of leadership and bravery.



Several semi-official search groups that have been active for decades are still finding the remains of dozens of soldiers each year. These groups say they have found and reburied in all more than 10,000 recovered from the battlefield in the county of Murmansk since the end of the war. The overwhelming majority have been Soviet soldiers and sailors; only about 200 have been German. (Sergey Yeshenko)



Equipment supplied to the Soviet Union under the US Lend-Lease Bill, which was introduced to the Senate on January 10, 1941, as House of Representatives Bill H. R. 1775, had its origins in an old statute of 1892 which allowed the Secretary of War to lease Army property 'when in his discretion it will be for public good'. The Bill became law on March 11, 1941, and permitted the President to give Lend-Lease aid to 'any country whose defense the President deems vital to the defense of the United States'. This Soviet A-20 Boston belonged to the 118th Aviation Reconnaissance Regiment of the Northern Fleet. L-R: G. M. Suvorov, N. G. Pavlov and P. V. Rodin. Suvorov, decorated with the Orders of Lenin and the Red Banner, wears air force uniform while the others are naval aviators. Rodin is a holder of the Order of the Red Banner. The total number of Bostons delivered to the Soviet Union was 2,771. (Museum of the Red Banner Northern Fleet)



#### NORTHERN FLEET SUPPORT FOR GROUND OPERATIONS

One of the most important features of the Petsamo-Kirkenes Operation was the participation in it of the air, sea, and land forces of the Northern Fleet. Admiral Golovko's fleet units had played a vital rôle in the defence of the Murmansk axis since the beginning of the war in 1941, fighting on both land and sea, and in the air above, to prevent German capture of the vital port, and also to protect allied convoys delivering war materiel. By the autumn of 1944, he commanded a force of more than 25 submarines, almost 300 surface vessels, an air force of approximately 275 aircraft, and approximately 15,000 ground troops. Stavka specified the missions of the Northern Fleet for 1944 in a directive issued on March 31. Included among them was the mission to operate jointly with the Karelian Front along the coastal flank with assault landings, artillery fire support, and transportation support.

Admiral Golovko was nine years younger than General Meretskov, and one rank junior, but as has already been noted, was at no time subordinated to the Karelian Front commander. Golovko took his orders from Stavka and the Main Naval Staff. The two commanders met in April, shortly after the March 31 Stavka directive, they discussed Meretskov's operational plan in early September, and then met again on September 29, the day that General Meretskov issued his Front order. The specific missions of the fleet agreed upon by the two commanders were as follows: blockade the coastal area occupied by the Germans, permitting neither withdrawal nor reinforcement by sea; operate jointly with the 14th Army in the penetration of the enemy defences and the seizure of ports; support the offensive of ground forces with coastal artillery and naval gunfire in coastal areas; actively participate in the land offensive by the commitment of naval infantry from Srednii Peninsula and in amphibious operations; and aid in the logistic support of the 14th Army by transporting men and supplies forward from Murmansk. It was also during the last week in September that Golovko received a directive from Main Naval Staff to re-establish a Soviet naval base at Petsamo, which led to the planning for the landing at Liinakhamari.

During the weeks preceding the offensive, fleet units undertook a number of preparatory measures. Hydrographic service conducted photographic and geodesic surveys of the enemy-occupied coastline, detecting and marking shore batteries and potential landing areas. Officers who were familiar with Petsamo Bay were sought out and detailed to the landing forces. Naval infantrymen rehearsed in various aspects of amphibious

landing operations, such as unloading, offloading, actions ashore, and night combat. The two reconnaissance detachments were brought together and prepared for their raid. Naval air forces intensified their strikes on German shore batteries and installations. On the night of October 8/9, Admiral Golovko and his mobile headquarters relocated from fleet headquarters in Poliarnii near Murmansk to Ozerko, on Srednii Peninsula.

Forces of the Northern Fleet conducted five separate amphibious landing operations in support of the 14th Army's ground offensive. The initial landing, executed on the night of October 9/10, was also the largest, involving nearly 3,000 naval infantrymen. It also featured a demonstration landing on the opposite side of Srednii Peninsula, which had little effect. In retrospect the principle criticism one can make of this initial landing is its timing, coming as it did almost 30 hours after the German forces on that flank were authorised to begin their withdrawal. But the decision of when to launch the landing force was not Admiral Golovko's to make, it was driven by the operational plan.

According to Admiral N. G. Kuznetsov, who at the time was Commander in Chief of the Soviet Navy, Meretskov had originally proposed to execute this amphibious landing

at the same time that his ground offensive began on October 7. Stavka and the Main Naval Staff did not approve this proposal. Since the landing was executed successfully on October 9/10, after two days of fighting on the main axis, there is every reason to believe it would also have been successful if launched earlier. If it had gone in before the German forces on that flank had begun their withdrawal, the possibility of an encirclement here would have been much greater.

The Liinakhamari landing on the night of October 12/13 at first glance looks unplanned. The bulk of the troops who participated in this landing were gathered up at the last minute from submarines, subchasers, and other fleet units in Poliarnii on the previous night. These men were hurriedly transported to embarkation points on Srednii Peninsula and organised into detachments. Only 150 of the 660 men were from organised units of naval infantry. The hydrographic reconnaissance, the Krestovyi raid, and the assembling of harbour pilots, however, indicate the early intent of the fleet commander to execute the landing. Golovko's decision to carry out the plan with hastily assembled forces was vindicated: the naval infantry captured the port and secured the northern flank of Petsamo.



With the over-painted Soviet insignia having been worn away by the elements, this wrecked Boston clearly shows its origins. It lies close to the mining town of Kovdor in northern Russia and was once on the strength of the 118th Aviation Reconnaissance Regiment so may well be the same aircraft pictured at the top of the page. Its serial number is 43-9255 and it was recorded as missing on May 7, 1945. The wreckage was first visited by a Russo-Swedish team in 1993. The crew are buried beside the plane. (Lars Gyllenhaal)



To speed aid to the Soviet Union, war materiel was sent from Britain under the Anglo-American Mission set up after the Atlantic meeting between Churchill and Roosevelt in August 1941. The so-called Moscow Protocol signed on October 1, 1941 declared the unanimous decision for the provision of supplies from British and US centres of production. Up to that date, the Soviets were paying cash for all American supplies but the President immediately extended a credit of \$1 billion. *Left:* The RAF sent two squadrons of Hurricanes with pilots and ground crews to demonstrate the aircraft to the Russians, of which



some 3,000 eventually reached the Soviet Union. To train the Soviet pilots on the Kola Peninsula in using the Hurricane, No. 151 RAF Wing was sent to Murmansk. The wing was also involved with the actual defence of the town and Royal Air Force pilots escorted Russian bombers on some 40 missions. During only six weeks they destroyed 15 enemy aircraft, losing one Hurricane and its pilot, but without the loss of a single Soviet bomber. This machine belongs to the 78th Air Fighter Unit. *Right:* This pilot wears a New Zealand shoulder flash and a red star on his left breast pocket. (Museum of the Red Banner)

The third landing, executed just before dawn on October 18, was significant for two reasons. First, this force assembled and embarked at Petsamo, which had been captured only three days earlier from the Germans. Second, whether by design or circumstances, when this force reached the Norwegian border, it cleared the coastal zone to the west in conjunction with a rifle regiment of the 368th Rifle Division, 131st Rifle Corps, as far as Tarnet.

The last two landings, on October 23 and 25, appear to have had little significance to the outcome of the ground offensive. On the 23rd, 625 naval infantrymen landed in Kobbholm Fjord, and advanced on two separate routes to the west and south-west. Although they cleared the coastline of a few shore batteries, the ground offensive was well to the west of them. On the 25th, 835 naval infantrymen went ashore in Holmenger Fjord, and advanced on two separate axes to the south reaching the Kirkenes area two days after the city had been captured by army ground forces.

One additional landing was contemplated, but not conducted, according to the mem-

oirs of the Northern Fleet chief-of-staff, Admiral V. N. Platonov. Sometime around October 14-15, as Soviet forces closed in on Petsamo from three sides, Admiral Golovko came up with the idea of landing amphibious forces at the Norwegian ports of Vardo and Vadsø on the Varanger Peninsula. This operation, if successful, could have resulted in the rapid collapse of the German defences in front of Kirkenes by the cutting off of both land and sea routes of withdrawal. According to Platonov, a reconnaissance party went to the area and reported back that the German defences were vulnerable. A force of unspecified size was embarked, but called back when headquarters in Moscow failed to support the plan. Too much caution by Moscow may have prevented a field commander from achieving a significant operational success.

The Northern Fleet had approximately 275 aircraft in its air arm in the autumn of 1944 for support of the Petsamo-Kirkenes Operation, of which 160 were fighters, 55 were bombers, and 35 were ground-attack aircraft. The remainder were reconnaissance and utility aircraft. This air fleet flew a total of almost 9,000 sorties during the operation,

of which over 1,100 were in support of naval ground forces. The remainder were flown against German naval traffic at sea or in harbours. A careful examination of all Soviet sources does not reveal an instance where naval aviation supported the army ground forces.

Northern Fleet units provided absolutely crucial support to 14th Army logisticians, both in the preparatory phase and during the conduct of the offensive, by moving men, equipment, and supplies from the Murmansk area forward. From a range of Soviet memoir and secondary sources, the quantities are as follows: 25-30,000 troops; over 100 tanks and self-propelled guns; approximately 200 artillery pieces and their prime movers; over 200 wheeled vehicles; and 25,000 metric tons of supplies and ammunition. How important was this support? The army could have moved their equipment, men, and supplies only by diverting scarce engineer assets from other critical tasks. Add to that the time needed to construct roads and bridges, and it becomes obvious that without help from the Northern Fleet, this operation could never have been launched on October 7.



Two of the 247 US-made P-40 Tomahawks that were supplied to the Soviets. (Museum of the Red Banner Northern Fleet)



## ANALYSIS

A great number of military lessons can be learned from a careful analysis of this operation in all its aspects and at all levels of command. At the strategic level, there is no indication in Soviet sources that this operation was timed to coincide with any other offensive operation being conducted elsewhere on the Soviet-German front. The factors which determined the actual initiation of the offensive seem to be more related to events in this somewhat isolated theatre of war, beginning with the decision in the spring of 1944 to attack the Finnish army first. Having thus committed the bulk of the maneuver units of the Karelian Front to the offensive in Southern Karelia in June, Meretskov could not hope to begin large-scale offensive combat anywhere else in his Front until those troops became available again. For this reason, the Petsamo-Kirkenes Operation could not have begun much earlier than October 7, given the time required to reposition forces from Southern Karelia to the Murmansk area.

One might ask, why did General Meretskov not wait until winter, when the ground is frozen, and then utilise the better trafficability of the terrain to launch his offensive. On this issue there are arguments on both sides. It is questionable if winter weather would have made the terrain any more trafficable, given the presence of so many water obstacles and the nature of the soil and topography. Winter brings other factors into play which must be considered, namely, survivability of the force in sub-zero temperatures, and continuous limited-visibility operations due to the polar night, without benefit of current night-vision technology.

Whether or not Stavka or General Meretskov considered these physical factors is not known, but it is certain that they looked at the political and military situation. Meretskov indicates in his memoirs that although he did not know the intentions of the German command after Finland's exit from the war, sooner or later Germany would have to withdraw their forces from northern Finland. It was his desire that these forces not depart 'unpunished', and so he wanted to attack them as soon as possible. Stavka, on the other hand, perhaps not aware of German plans to withdraw into Norway under Operation 'Nordlicht', was convinced that the Germans intended to remain in the Petsamo area. One also cannot discount as a factor the probable desire of the Soviet government to occupy that portion of Finnish territory adjacent to Norway, which the Germans had used as a springboard for their invasion into the Soviet

**Left: Veterans of the Pechenga Red Banner Separate Artillery Division of the Northern Fleet by their monument on the Srednii Peninsula. (Sergey Yeshenko) Right: The land that connects the Sredui peninsula with the Kola Peninsula is called Musta-Tunturi, and on the 'Great Hill' this memorial commemorates the Soviet border guards unit that erected a red flag here on September 8-9, 1941. (Sergey Yeshenko)**

Union in 1941. This territory included the port of Petsamo, as well as the strategically important nickel mine to the south-west.

In all of the strategic considerations, it does not appear that the Soviet government gave any serious thought to the occupation of any part of Norwegian territory. Their subsequent occupation appears to have been undertaken solely for military objectives, and the fact that they left the area in October 1945 of their own volition, leaving the border as it had been for the past 140 years, supports this conclusion.

The principle weakness of the Soviet operational plan — the delay of the initial amphibious landing and cross-isthmus attack by ground forces of the Northern Fleet — has already been mentioned. Recall that it was Meretskov's original proposal for these attacks to be conducted simultaneously with his ground offensive. The other interesting aspect of the operational plan is that it made no provision for pursuit of German forces into Norway, an entirely foreseeable event. It is to Meretskov's credit that he and his subordinate army and corps commanders were able to react quickly to the developing situation, and divert three corps toward Kirkenes in the second and third stages of the operation. While he made no plan to pursue German forces into Norway, Meretskov



**Marshal K. A. Meretskov, commander, Karelian Front, who was promoted to that rank after the successful conclusion of the Petsamo-Kirkenes Operation.**



**Sub-machine gun-equipped scouts advancing along the Barents Sea.**



**Left: Viktor Nikolayevich Leonov** was to become one of the most highly decorated officers of the Soviet Union, twice being awarded the Golden Star of the Hero of the Soviet Union. This photograph was taken before his most famous battle, the raid on the guns of Krestovyi in October 1944 (see pages 13-14). **Right: Leonov, standing with the Tokarev semi-automatic rifle,**



**with another member of the 181st Separate Reconnaissance Detachment (181st ORO), Vasily Kashutin, with a PPD-40 sub-machine gun. Leonov was wounded in the left cheek in May 1942 resulting in the scar, and Kashutin was killed in September so this picture must have been taken sometime in the summer of 1942. (Museum of the Red Banner Northern Fleet)**

did not hesitate to allow his Spetsnaz units to utilise Norwegian territory for their operations. This is consistent with the Soviet practice of sending naval ground reconnaissance groups into Norway as far back as 1941, to reconnoitre German installations and naval vessel movement.

Looking at the Soviet command and control system, one first is impressed by its complexity. Meretskov, a former chief-of-staff of the Red Army, who had commanded an active front throughout the entire period of war, whom Stalin personally regarded as a reliable and competent general, still had to seek approval of his operational plan by Stavka. Admiral Golovko operated in two chains of command. He received operational guidance and orders from Stavka, but also administrative support and orders from the Main Naval Staff in Moscow. Going down one level, the 7th Air Army commander, General Sokolov, also worked for two bosses. His operational orders came from his immediate superior, General Meretskov, and his administrative guidance and orders on training, personnel, maintenance, and other support issues came from the Main Air Staff in Moscow. If this isn't complicated enough, at Front and below there were both common and special staffs, whose tentacles reached down into subordinate staffs at each level, with considerable authority. At the Front level, for example, special staff officers, such as the Commander of Engineer Troops, the Commander of Tank and Mechanised Troops, or the Chief of Rear Services, were

general officers with Deputy Front Commander prefixes.

What allowed this complex system to function rationally? In the first place, it was developed over time, and tested and proven in battle. Command and control of large-scale operations, much larger than the Petsamo-Kirkenes Operation, had reached a high level of proficiency by this stage in the war. Even the difficulties imposed by the arctic terrain and weather did not severely degrade the operational command and control of this battle. The glue which held the

whole system together, and made it effective, was personal trust of patrons and clients, of Soviet commanders and subordinate commanders, of staff officers at higher levels and staff officers at lower levels. This trust was built up over years of relationships which frequently extended backwards in time as far as the civil war. Meretskov, for example, surrounded himself with commanders and staff officers with whom he had served as commander of the 7th Army during the war with Finland in 1939-40, and as commander of the Volkhov Front from 1942-44.



**Petsamo Bay, October 12, 1944: men of 181st ORO after having successfully seized the batteries of Cape Krestovyi. (Museum of the Red Banner Northern Fleet)**

Meretskov was an energetic Front commander, who during the battle frequently could be found at a corps or division command post on the main axis. This tendency for personal supervision of subordinates was reflected down the chain of command. Corps commanders gave daily oral orders to division commanders, either in person or over the telephone, followed later by written orders. Corps and division command posts were located within sound of the battle, with division observation posts well forward, often with the lead rifle regiment. If radio or wire communications were broken between say a division commander and his corps commander, the division commander did not hesitate to send his report directly to the army commander. Conversely, the army commander was just as likely to bypass the corps commander and give an order directly to a division commander, who in turn would inform the corps commander.

It was this personal style of command, along with the well-developed staff relationships, which enabled Soviet commanders frequently to change subordination of their units, or redirect large units onto new axes of advance, reflecting significant changes in the operational plan.

The performance of Soviet combat units was generally good, given the tremendous hardships imposed on them by the terrain and weather. Regular infantry units were employed in frontal assaults up steep slopes defended by entrenched German mountain troops, while other Soviet regiments attacked the same positions from the flank or rear. In this way, Soviet tactics mirrored the operational scheme of maneuver. As the battle went into the third day and the forces on the main axis crossed the Titovka river, the infantry soldiers fought with less ammunition and much less fire support, against German units whose lines at the same time were shortening. Soviet units frequently moved or attacked at night, on terrain which was difficult to traverse even in daylight.

Light infantry units had the most difficult task of all, to advance on axes without roads, carrying all of their food and ammunition, as well as heavy weapons, on pack animals. In all three phases of the operation, both light rifle corps were assigned similar missions — move around the flank of a German unit or position, establish a blocking position on a main supply route, and hold it until the arrival of the main force. The 126th Light Rifle Corps successfully executed this mission from October 7 to 12, blocking the Arctic Ocean Highway behind the 2. Gebirgs-Division. When the main force arrived in the area, however, the 126th Light Rifle Corps was split, and one brigade was sent to cut the Tarnet Road west of Petsamo.

The decision to employ one battle-weary brigade of the 126th Light Rifle Corps rather than the relatively fresh two brigades of the 127th Light Rifle Corps is the major operational flaw of this phase of the offensive, because it contributed to the escape of all the German forces in the Petsamo area into Norway. This decision, when coupled with the delay of the amphibious landing and cross-isthmus attack by forces of the Northern Fleet, led to the failure of Soviet forces to encircle and destroy the XIX. Gebirgs-Armeeekorps, as was their goal.

In the second phase of the operation, the 127th Light Rifle Corps, operating on the south flank of the 31st Rifle Corps, reached the German main supply route south-west of Nikel with an element, only to see that element destroyed because it had insufficient combat power to survive against a more mobile and powerful enemy. In the third phase of the operation, both light rifle corps were delayed in their movement due to logistic problems, and both were unable to coordinate their subsequent movement with the main attacks they were to support.



**Another Hero of the Soviet Union, Semyon Mikhailovich Agafonov, with sniper rifle and commando cap. (Museum of the Red Banner Northern Fleet).**

Soviet light infantry proved to be highly mobile, but that same mobility often took the units out of range of supporting heavy artillery. It placed them in fighting positions where their lightness, expressed in terms of combat power, became a liability. The enemy was able quickly to maneuver

reserves to counter-attack, or simply apply greater force at the critical point. In the latter phases, the cumulative effects of physical exhaustion, brought on by continuous movement and combat, and the inability to provide logistic sustenance rendered both light rifle corps combat-ineffective.



**Men of the 181st Separate Reconnaissance Detachment with grenades and Tokarev rifles. (Museum of the Red Banner Northern Fleet).**



In a little-known episode in the aftermath of the Petsamo-Kirkenes Operation, ten USAAF C-47 Dakotas with uniformed American crews transported 1,442 Norwegian ski troops (trained in 'neutral' Sweden as 'police troops') to north Norway via the Swedish air force base (F21) at Luleå, Sweden. These troops supported the Red Army units in arctic Norway in driving the Germans west and southwards while also making clear to the Soviets that Finnmark (the easternmost Norwegian county) was a part of Norway. The aircraft also transported 1,100 tons of military, medical and civilian supplies to Kirkenes and other points. In addition, this unorthodox unit performed tasks for the Office of Strategic Services (OSS) and the Norwegian resistance. This mission took place between December 29, 1944 and August 1, 1945, and was called Operation 'Where and When'. (Norrbottens flygflottilj F21)

The performance of Soviet artillery in this operation can best be evaluated in the framework of the missions given to it in the September 29 Front order. The first was to defeat the enemy's artillery, most of which was deployed on the reverse slopes of the 2. Gebirgs-Division's strong points or in firing positions east of the Titovka river. The opening 2-hours-35-minute artillery preparation was only partially effective in accomplishing this mission. Soviet sources attribute this failure to the problem of observation and adjustment of fire caused by inclement weather. As a result, in some sectors German artillery survived the Soviet artillery preparation, delaying the success of Soviet infantry attacks.

The second mission for artillery in the Front order was to support the breakthrough, and then the crossing of the Titovka river. This the artillery units were able to do from their initial firing positions, which for some units was at the limit of their range. The mission which was most difficult for Soviet artillery units, not only early in the operation but also in its latter two phases, was to support the infantry's attack into the intermediate German positions. Several factors contributed to the problem, beginning with a shortage of accurate maps of the area of operations. Units and commanders were operating with 1:100,000 maps, published in 1936, which did not adequately reflect the terrain. There was a lack of trained observers in infantry units, resulting in many cases in the employment of area fire, rather than adjusted fire. To solve this problem, artillery commanders sent officers with their own radio sets out to supported units. In the closing phase of the operation, the Soviets also used small spotter planes to adjust fires.

The most serious problem with Soviet artillery employment, however, was mobility, both for the weapons systems and for the logistic resupply of ammunition. Soviet artillery units did not displace from their initial firing positions until late on the third day of the battle, and did not cross the Titovka river until the night of October 10/11. This delay in forward displacement was costly to Soviet infantry formations, causing some units to have to give up hard-won ground

the army second echelon to attack on the axis of the Luostari-Nikel road. According to the corps commander, his divisional and regimental artillery went into battle with only one-fourth to one-third of a unit of fire. As a result of this shortage, which was chronic at this stage in the operation, infantry units attacked with weak artillery preparations and on-call fire support.

In the final analysis, given the Soviets' experience in operating on this very same terrain during the Soviet-Finnish War of 1939-40, it is difficult to understand why they did not foresee these terrain-related problems and plan for them. Equally difficult to understand is the Soviet predisposition for high tube densities, rather than a smaller quantity of artillery more efficiently organised, controlled, and supplied.

The Soviet employment of armoured vehicles in this operation did not have as great an impact on the final outcome as one would expect, given that the Germans had no armoured force. Tanks and self-propelled guns did not enter combat until October 11, after they crossed the Titovka river. The nature of the terrain and poor condition of the roads limited armoured units to an infantry support rôle, in which they could advance on a frontage of only one or two vehicles. They suffered high combat and mobility losses, expended a higher than normal rate of main gun ammunition, and were always vulnerable to air attack.

The Soviet attitude toward engineer support of offensive combat is best reflected in this quotation from Lieutenant-General A. F. Khrenov, Commander of Engineer Troops, Karelian Front: 'Absolutely untrafficable terrain does not exist. The degree of trafficability depends on the quality of engineer support.' Meretskoy and his engineer staff pulled together an enormous quantity of engineer units to support the offensive, reflecting their concern for mobility problems.

Much of the engineer work was to have been accomplished during the summer of 1944, developing the road network and preparing assembly areas in the area of operation. While much of this work was indeed accomplished, the commander of the 99th Rifle Corps, Lieutenant-General S. Mikulskii, recalls that his men had to construct their own primitive shelters in their division and regimental assembly areas on October 6.



Colonel Gösta Von Porat (left) was the co-operative Swedish base commander when Colonel Bernt Balchen (right) had his unorthodox unit of C-47s based at Luleå.



**American and Swedish airmen celebrating May 7, 1945 at Luleå. Many have changed uniforms with each other. The end of hostilities meant no end to the importance of the unit and, after VE-Day, Colonel Balchen's C-47s were vital in establishing control over the large intact German forces in northern Norway and, in particular, in taking care of the many Russian and Yugoslav inmates of the horrendous German PoW camps in Norway. (Norrbottens flygflottilj F21)**

The second mission of engineer troops was to assist the infantry forces in the initial assault on German defensive positions. During the preparatory period, engineer units aided in the reconnaissance of the terrain, helping to determine the nature and strength of the fortifications, suitable terrain for the future construction of roads and paths, and possible crossing sites on the Titovka river. To support the infantry assault, engineer troops contributed flame-thrower teams and obstacle-clearing squads to assault groups in rifle battalions and companies.

The third mission of engineer troops was to support the rapid forcing of water obstacles on the main axis. Equipped as they were with both light and heavy bridge sets, and two battalions of amphibious vehicles, the Soviet engineers were generally able to construct or organise a crossing at any major obstacle, first for dismounted troops and then for vehicles.

By far the most difficult mission for engineer troops was the construction, repair, and maintenance of the road net. The 14th Army commander initially planned to construct a road on the axis of each of the four rifle divisions in the first echelon, and organised his engineer forces accordingly. On the second day of the offensive, he committed his second-echelon rifle corps, as well as artillery and other units, to engineer tasks. On the third day, he abandoned the plan for a road in each division sector, and instead concentrated on the construction of a single road, 10-12 kilometres in length, to connect the existing Soviet and German roads through the area of the breakthrough. This road was not completed until the afternoon of October 10. The 99th Rifle Corps commander pulled all his engineer assets back from rifle divisions, except the battalion attached to the tank brigade, and assigned them road and bridge tasks.

During the second phase of the offensive, the principal engineer tasks were road clearing and restoration. The Germans skilfully

planted mines, demolitions, and aviation bombs in the road-bed, in one area over 450 devices in a ten-kilometre stretch of road. In another area, in each kilometre of road the Germans had detonated 12 to 15 250kg aviation bombs, each crater measuring five to seven meters in diameter, with a depth of over two meters. The clearing of these mines, and the filling of craters, was done primarily by hand, and thus was very time-consuming.

The aggregate accomplishments of Soviet engineer units, with significant infantry support, during this offensive were considerable. Soviet engineers built 15 kilometres of road suitable for wheeled vehicles, 210 kilometres

of tracks or paths, 33 temporary bridges of various lengths with capacity up to 16 tons, 20 bridges of capacity up to 60 tons, two pontoon bridges and three assault bridges; organised four assault crossings; constructed 30 fords for armoured vehicles; and cleared and restored nearly 500 kilometres of road, removing nearly 16,000 explosive devices totalling more than 50 tons of high explosives.

During the course of the Petsamo-Kirkenes Operation, Soviet air forces of the ground forces flew a total of approximately 6,750 sorties. Although a general superiority of 6:1 in favour of the Soviet air force did not guarantee local air superiority in every circumstance, due to the difference in weather patterns over respective airfields, there is no question that close air support and air reconnaissance were important to the success of the ground offensive. On the third day of the offensive, for example, General Jodl, commander of the XIX. Gebirgs-Armee-korps, sent the following message to his commander: 'Army HQ must consider that command and control of units is very difficult because air attacks have almost uniformly destroyed our wire communications.' On October 10, when the 126th Light Rifle Corps reached a blocking position west of the 2. Gebirgs-Division, air reconnaissance and close air support were crucial in both locating and interdicting the German counter-attacking force. In his own after-action report, General Jodl indicated that German troops hurriedly withdrawing to subsequent rearward positions were frequently exposed to heavy strafing and bombing attacks.

The Soviets employed aerial resupply and delivery on several occasions, providing ammunition and provisions to Spetsnaz and light infantry units by parachute container drop, and later to the main force by air landing at the captured Luostari airfield. Additionally, almost 1,000 wounded Soviet soldiers were evacuated to Murmansk.

Soviet logistic support to the offensive was, despite Soviet claims to the contrary, poorly executed. Units began to run out of small-arms ammunition on the third day of the offensive, a situation which was subsequently repeated several times. The problem in getting artillery ammunition forward has already been discussed, as well as the difficulty in supplying the two light rifle corps, which were always operating away from the roads on the main axes.



**A monument commemorating Colonel Balchen and his men was unveiled on June 16, 1995 by high-ranking US, Norwegian and Swedish officers. It stands inside the Swedish air force base F21. (Lars Gyllenhaal)**



## CONCLUSION

The immediate result of the Petsamo-Kirkenes Operation was the clearing of all Soviet territory in the Far North of German forces, which was, after all, the purpose of the operation. The failure of Soviet forces to encircle and destroy the German XIX. Gebirgs-Armee Korps can be attributed to several factors. The Soviets themselves offer five reasons: the slow advance of the 99th Rifle Corps on the main axis; the lack of fire support and logistic support caused by mobility problems; the severe ammunition shortages in units fighting in crucial sectors; the inability to reinforce heavily committed units with air support and reserves; and the delay in transition to pursuit by the forces of General Pigarevich against the 6. Gebirgs-Division. The other two factors, which Soviet analysts do not recognise, have been discussed in this article, namely the flaw in the operational plan by which the initiation of ground combat by naval infantry forces was delayed until breakthrough was achieved, and the employment of one brigade of the 126th Light Rifle Corps to cut Tarnet Road on October 12 rather than the entire 127th Light Rifle Corps.

The liberation, and then occupation of the Finnmark area of Norway by Soviet forces from October 1944 to October 1945 had an important effect on Norwegian-Soviet bilateral relations over the decades since the end of the Second World War. If the Norwegians have viewed the German military occupation as cruel and oppressive, they view the Soviet military occupation as humane and benevolent. When Soviet troops marched back across the border, they left behind a legacy of goodwill which influenced Norwegian public opinion toward the Soviet Union throughout the Cold War. The Norwegian government's policy prohibiting the stationing or manoeuvring of NATO forces in Finnmark, the area of Norway adjoining the USSR, was conditioned in part by the desire to maintain this goodwill.

Combat experience gained in the Petsamo-Kirkenes Operation was quickly exploited by the transfer, in late 1944 and early 1945, of many Soviet commanders, staffs, and units to other fronts. Army General Meretskov was promoted to Marshal in

May 9 is the traditional Russian VE-Day. This was the scene in 1997 in Murmansk with a naval infantry BTR leading the parade (Sergey Yeshenko).

November, and in the spring of 1945 transferred with his entire Front staff to Khabarovsk, in eastern Siberia, to command the 1st Far Eastern Front in the campaign against Japanese forces in Korea and Manchuria. General Sokolov, the commander of the 7th Air Army, went along to become commander of the 9th Air Army.

The 20th Svirsk Assault Combat Engineer Brigade also went to the Far East, where its units conducted both conventional and special operations. The naval reconnaissance detachment of Headquarters, Northern Fleet, was transferred to Headquarters, Pacific Fleet, in June 1945, and participated in amphibious landing operations against



The red flags still come out on VE-Day for it was, after all, a Soviet victory still celebrated by huge crowds in Murmansk. The blue cross of St Andrew is the symbol of the Russian Navy. (Sergey Yeshenko)

Japanese forces in northern Korea, in co-ordination with operations of Meretskov's ground forces.

The 126th and 127th Light Rifle Corps appeared in southern Poland in February 1945 as the 126th and 127th Mountain Rifle corps, with the same commanders and numbered brigades. Both corps fought through the mountains of north central Czechoslovakia and ended the war east of Prague. The 10th Guards, 65th (renamed 101st Guards), and 114th (renamed 102d Guards) Rifle Divisions from the 99th Rifle Corps, and the 14th Rifle Division of 131st Rifle Corps were all sent to East Prussia in January and February 1945. These units fought along the Baltic Coast on the flank of the Berlin operation, and finished the war north-east of Rostock.

Since 1964, the Soviet military press has published over 40 journal articles, a dozen of them since 1984, pertaining to the Petsamo-Kirkenes Operation. As recently as October 1987, the editors of *Voennoistoricheskii zhurnal* [Military Historical Journal], the official historical publication of the Soviet Ministry of Defence, reaffirmed the status of the Petsamo-Kirkenes Operation as one of approximately 50 Soviet military operations of the Great Patriotic War which had strategic significance. Because it was such a unique operation in respect to size and type of forces on arctic terrain, it has given the Soviet armed forces experience in arctic warfare that, for instance, the American military establishment does not have. These Soviet accounts all emphasise the significant effects of terrain and weather on all aspects of combat and support operations, and command and control. The lessons the Soviets have learned cannot be discounted simply because they are five decades old and drawn from someone else's combat experience. They apply to any combat operation in any theatre of arctic warfare.



**Eidelweiss on the German memorial inaugurated at Parkkino (near Pechenga) in 1994 to record the 12,000 dead of the Gebirgsjäger on the 'Arctic Front'.**

*The Petsamo-Kirkenes area today is quiet. The border is marked by both Russian Federation and Norwegian posts, and on the Russian side, there is a fence to prevent the migration of caribou. On the Norwegian side of the border, small guard towers look out over the barren landscape. Norwegian soldiers concern themselves both with activities across the border and with the summer migration of European tourists, who would remove Russian border markers. After half a century of almost total inactivity, the Russo-Norwegian*

*border area is now again full of people and vehicles crossing it but today for other reasons: the pursuit of profit and normal, neighbourly relations.*

*On the Russian side of the border, the former German airfields at Luostari and Salmijaervi are now Russian Air Force bases. Ground forces permanently stationed in the area include the motorized infantry regiment with the official name of 'Kirkenes', in remembrance of the successful Petsamo-Kirkenes operation in which it took part.*



**In true Soviet style, the Great Patriotic War (1941-1945) has a suitably large monument in Murmansk, called Alyosha. On**

**May 9, Alyosha and the Eternal Flame is always the rallying point. (Sergey Yeshenko)**

The wreckage of an He 111 that crashed into the Chibiny mountains north of Apatity in December 1944. The remains of the crew and passengers were buried beside the aircraft only in 1996 by a team of Russians. It was on a mission for the Abwehr Fremde Heere Ost carrying a Sonderführer born in Orel, Russia, in 1912 (but of German nationality) and two Vlasov-army personnel dressed as Soviet officers. They were originally to have been dropped over Umba on November 18 but one of the agents accidentally opened his parachute while still in the plane and the Heinkel, piloted by Gefreiter Udo van Dühren, had to abort and return to Norway. Here, three local Russians, Filipp Kuznetsov, Andrei and Sergei Khitrov, examine the wreckage in the summer of 1996. It was only when these photos were taken that the Luftwaffe/Abwehr personell were finally laid to rest in a temporary grave. However, it now seems as if the remains will be moved to a cemetery, although nothing has been decided at the time of writing (November 1997). (Sergey Khitrov)



# DROPPING RUSSIAN ABWEHR AGENTS OVER KOLA

By Rune Rautio, Filipp Kuznetsov and Lars Gyllenhaal

In the summer of 1996, Filipp Kuznetsov, a resident of the south Kola town of Apatity, located a Heinkel He 111 in the Chibiny mountains with the remains of the crew of seven men scattered around the aircraft. The plane was a He 111 of the H16 type, with the designation D7+GP with Werknummer 8137, (although sometimes also referred to as 8147). It was on a special mission for the German intelligence service, the Abwehr, and belonged to the 1. Staffel of Fernaufklärungsgruppe 124 (Long Range Reconnaissance Group No. 124).

The 1.(F)/124 was first tasked to drop two agents recruited from among the ROA on November 18, 1944. (The German-sponsored Russian Army of Liberation (sic) was abbreviated ROA in Russian.) They were to be inserted by parachute, dressed as Soviet officers and armed with Soviet weapons. Their target was Umba on the south coast of the Kola Peninsula. However, the Heinkel, which left from Banak airbase in northern Norway, had to return without having dropped any agents due to bad weather over southern Kola.

A second attempt to drop the agents was made on December 16. This time the plane was D7+GP. The aircraft started out from Bardufoss airbase and had a crew consisting of Unteroffizier Hubert Rauch (pilot, born 1920), Oberleutnant Wilhelm Schauen (observer, born 1915), Unteroffizier Hermann Preindl (signaller, born 1923) and Feldwebel Friedrich Windhorst (mechanical engineer, born 1915). In addition, there were three Abwehr agents on the plane: Sonderführer Alexander Althausen (born 1912 in the Russian city of Orel) and two others, as yet unknown, who had previously served in the ROA. Now the Russians belonged to the 144th Front-Aufklärungsgruppe (Front Reconnaissance Troop) of the Abwehr's Fremde Heere Ost (Foreign Armies in the East) department.

At 1950 hours, the Heinkel broadcast its last radio message from the region of the large Finnish Lake Inari: 'We fly over the front' after which nothing more was heard of the plane or its crew.

In the spring of 1945, Taisa and Igor Mosolov, both 13, living in the village that later became Apatity, came across the Heinkel while walking in the mountains. They were attracted by something that gleamed in the distance and were amazed to find the wreckage; seven men partially

dressed in 'mountain gear'; a lot of parachute silk; a rubber boat; detailed maps of the Kola Peninsula; Soviet Model TT pistols and vari-

ous currencies: Norwegian crowns, German marks, US Military Occupation Zone marks and Russian roubles.





**Currency recovered from the wrecked He 111 by the Mosolov children in 1945 and now in the possession of Filipp Kuznetsov. Note the Allied occupation zone notes marked 'Allierte Militärbehörde'. (Lars Gyllenhaal)**

The children took the money and parachute silk home. The sum of 90 roubles was a marvellous find but, perhaps even more welcome, was the silk which soon was put to good use to make two dresses.

Nothing was known of all this in the West until August 1996 when a team from the local newspaper *Dvazhdy Dva* — Filipp Kuznetsov, and Sergey and Andrei Khitrov — again found the plane and crew. By now,

the bodies had long since been torn apart by animals and suffered from exposure to the elements after 52 years in the open. It was not even certain how many crew there had been but Filipp figured there had been seven. The Germans (of which three later turned out to be Russians in German service) were given a temporary grave by the newspapermen and, at the time of writing, are awaiting burial in a proper cemetery.

Since the rediscovery of the Heinkel, Rune Rautio in Norwegian Kirkenes has been investigating the mystery of the plane's last flight and the identities of the crew. Not only has he discovered the names given above and the ID numbers, but he has also interviewed living Luftwaffe veterans who served at Bardufoss from where D7+GP took off. From these sources he has also obtained photos of some of the crew.

Rune Rautio also believes he has identified a second aircraft, a Ju 88, from the same unit, — 1.(F)/124 — which Lars Gyllenhaal, Aleks Gilyazov and Filipp Kuznetsov discovered in September 1966 in the Russian Lapland Nature Park.

It was on October 17, 1944, in the heat of the Petsamo-Kirkenes battle, that a Ju 88 D-1 with the designation G2+LH (its Werknummer was 430784) took off from Kaamanen airfield in Finland to reconnoitre the Soviet October railway line between Murmansk and Kandalaksha. Since that day, the plane was listed as missing and there are no known post-war reports of the fate of the crew.

Much evidence uncovered by Rune Rautio conclusively points to the plane they found being G2+LH although the wreckage also bore traces of another marking: 1R+FH.

The crew of G2+LH consisted of Feldwebel Gerhard Turley (pilot, born 1922), Leutnant Gottfried Reuther (observer, born 1921), Unteroffizier Heinrich Steitz (signaller, born 1922) and Unteroffizier Bruno Urbanczyk (mechanical engineer, born 1923).

No traces were found of any crew members and Rune Rautio has not discovered any Russian reports about the shooting down of any aircraft in the vicinity of the crash site. It may be that the aircraft suffered technical problems and the crew bailed out only to die in the inhospitable wilderness or perhaps to be made prisoner and subsequently perish unrecorded in some NKVD camp.



**This Ju 88 (see also front cover), which is believed to have belonged to the same unit, 1. Staffel of Fernaufklärungsgruppe 124, and crashed while on a reconnaissance flight along the October Murmansk-Kandalaksha railway in the late autumn of**

**1944. The wreckage lies in the Russian Lapland Nature Park north-west of Apatity. Enthusiasts of the Internet can look at around a dozen Arctic crash sites in northern Norway and Finland at [Http://www.sci.fi/~junkers/index.htm](http://www.sci.fi/~junkers/index.htm) (Lars Gyllenhaal)**



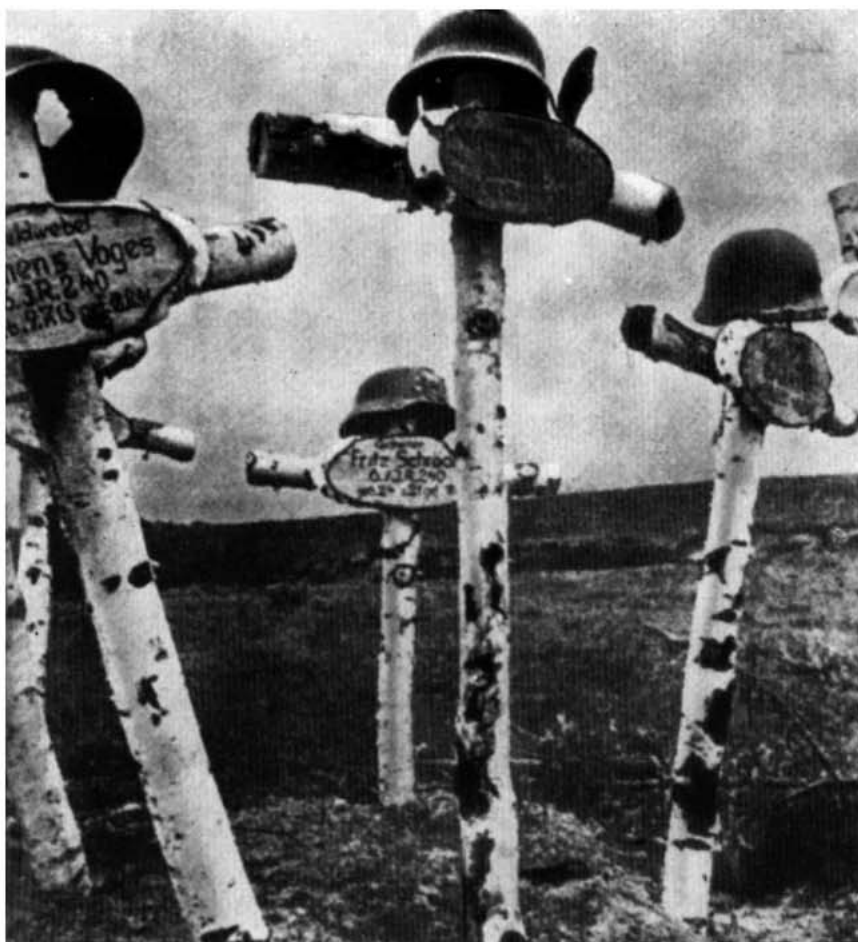


The war on the Eastern Front was not only fought with no holds barred but also with scant regard for the enemy's dead. Feldwebel Klemens Voges fell in Russia on August 18, 1941. German records only indicate that he was buried near Staroje Selo, of which unfortunately there are several in the former Soviet Union. So, today, Voges' grave is just one of the thousands of lost German graves in Russia.

In the past 25 years, *After the Battle* has on many occasions reported on the work of the Volksbund Deutsche Kriegsgräberfürsorge (VDK), the German War Graves Association whose headquarters is at Kassel.

The Volksbund was founded in 1919 and is a private association (there are today over 6,000 local branches; current membership is some 270,000). It is charged with the location, identification and registration of the nation's war dead, and the laying out, administration and maintenance of war cemeteries and memorials to the unknown dead, particularly those of the First and Second World Wars.

However, whereas the Allied war graves organisations, like the American Battle Monuments Commission and the British Commonwealth War Graves Commission, have been able to settle down to the routine of maintaining the existing cemeteries and memorials, and answering queries from relatives of fallen soldiers, the work of the VDK has seen a great upheaval in recent years as a result of the end of the Cold War. For, with the improvement of relations with countries in Eastern Europe, vast territories have been opened up which before 1990 were virtually inaccessible for the Volksbund — territories in which some three million German war dead were known to be buried, but which could never be reached.



## NEW GERMAN WAR CEMETERIES IN THE EAST

By Karel Margry

The scope of this change can hardly be overestimated. After 1945, the Volksbund had become solely a West German agency. For decades it tried, together with the German federal government and German Red Cross, to open talks with the countries in the Eastern Block concerning the German war graves in their territories and the fate of missing soldiers but with very little success.

Now, the fall of the Iron Curtain has changed all that. Since the demise of the Soviet Union, bilateral war grave treaties have been agreed between Germany and most of the eastern European countries. The first, and most important one, was signed with the Russian Federation on December 16, 1992. Since then, treaties have been concluded with Georgia and Hungary in 1993;

Albania in 1994; Kazakhstan, Uzbekistan, Moldavia, Estonia, Armenia and Azerbaijan in 1995; and Latvia, the Ukraine, Rumania, Byelorussia, Lithuania and Croatia in 1996. Such treaties form the legal basis of any war grave work, signatory countries pledging that



In general, the Soviets never cared about the German cemeteries on their soil and, if they did not deliberately raze them to the ground, allowed them to fall into disrepair. When the

Volksbund teams first arrived at this field near Rossoshka in southern Russia (in the Stalingrad area) in 1992, there was nothing to indicate that this was in fact a soldiers' burial ground.



Since the fall of the Iron Curtain, the Volksbund Deutsche Kriegsgräberfürsorge (the German War Graves Association) has found itself facing a new and, by its sheer magnitude, overwhelming task: to recover as many as possible of the three million German dead from the Second World War (and 700,000 from the First World War) who lie buried in Eastern Europe; to identify their graves and restore their cemeteries, and to clear the fate of the 800,000 soldiers still missing in the East. Finally, having gained free access to all areas of the former Eastern Front, search teams of the Volksbund have gone out to locate long-neglected burial fields and identify soldiers' graves. In this photograph identification is in progress near St Petersburg (formerly Leningrad) in 1996. (All pictures courtesy Volksbund)

war cemeteries are to be maintained permanently, that work on war graves can proceed uninhibited, and that a country is obliged to freely make land available for cemeteries of the other country's war dead. (Although there are still no formal war graves treaties with Poland, the Czech Republic, Slovakia, and the republics of former Yugoslavia other than Croatia, the Volksbund has in general been able to start work in these countries too.)

In practice, the treaties have usually led to the setting up of a joint commission; the exchange of casualty lists and grave registration records (there are many thousands of Russians, Poles and other nationalities who died in captivity and lie in cemeteries in Germany); and the formulation of specific plans for the preservation of old or construction of new cemeteries. In each country, the Volksbund has had to find a competent working partner which could provide personnel, transport, machinery and advice; in Rus-

sia, this is the 'Association for International Cooperation on the Maintenance of Soldiers' Memorials' (an organisation of the Red Army General Staff); in Latvia the national War Graves Commission; in Hungary the Army; in Poland the Polish Red Cross; while in the Czech Republic, Slovakia, and Slovenia arrangements have been made with private firms. A special case is presented by the former GDR — East Germany — where, since the German reunification of 1990, the Volksbund has been the sole responsible authority.

The German war graves found in the east divide into several categories. First of all, there are the cemeteries from the First World War. No less than 400,000 German soldiers from the 1914-18 conflict lie buried in Poland alone. Another 115,000 lie in the former Soviet Union, most of them in Byelorussia, and there are smaller numbers in other countries. A large number of the

First World War cemeteries originally lay inside the Reich, and only became inaccessible to the Volksbund later, as a result of the alterations in national borders at the end of the Second World War — like those in former East-Prussia (now part of Poland and Russia) or in that part of Germany which later became the GDR.

The war graves from the Second World War divide into two categories. Firstly, there are the wartime battlefield cemeteries, constructed by Wehrmacht units at the time and later overrun by the Red Army as the Germans were driven out. Then there are the prisoner-of-war cemeteries. Of the 2.2 million German soldiers who died in Russia, an estimated 1.2 million died while in captivity, either during or after the war. Their graves lie strewn all over the territory of the former Soviet Union — wherever the PoWs were put to labour — and often in quite remote and deserted regions: the mountains of Azerbaijan, the forests of Siberia, the steppe plains of Kazakhstan.

Of the 2.2 million dead, some 1.88 million are known by name and 1.4 million of these have known graves, or at least there are records to show where they were originally buried; the number of places where they are buried being a staggering 118,000.

A first opening to Russia was gained in 1976, when the Soviet Red Cross allowed access to two small German cemeteries in Moscow; three other cemeteries were given free in 1982, four more in 1989. But it was only the German-Soviet Partnership Agreement signed on September 13, 1989, which for the first time allowed free access to all German cemeteries and the right to restore and maintain them. This agreement was later confirmed by the War Graves Treaty between Germany and the Russian Federation signed in Moscow in December 1992.

On conclusion of the agreement, search teams of the Volksbund went out looking for known and unknown cemeteries. Travelling thousands of miles, and covering vast areas of land, they explored former battlefields, trying to find cemeteries by means of wartime maps and map references. They contacted communal authorities and churches, and questioned the local population for information about war graves in the area. Often, acting on local tips, they discovered burial fields or PoW cemeteries not previously known.

The state of these cemeteries varied greatly. The Soviet authorities did not care about German battlefield cemeteries, and allowed them to fall into decay. Exposed to



Quite often, for instance with mass graves, the recovery teams find it impossible to identify individual remains and all they can do is sort out the bones to establish the number of soldiers buried in a particular field, like here at Rossoshka.



Some cemeteries are found to be completely overgrown, like this one near St Petersburg, photographed in July 1996.

the weather and the seasons, the grave markers, usually a birch-wood cross or a German cross, disappeared or disintegrated. Wooden fences or stones lining the burial fields disappeared. In the case of the PoW cemeteries, these had usually not been landscaped — just a barren field with small metal markers indicating the individual graves. Many graveyards could hardly be recognised as such after 50 years. However, there were also cases, usually in rural villages and with smaller cemeteries, where the plots were found to have been kept neat and tidy by the local population.

The search teams also found, especially with battlefield cemeteries, that soldiers' graves, which had lain undisturbed for many years, had been pilfered in recent times by local grave hunters, either out of curiosity or because of the commercial value of the artifacts found in field graves. Many human remains which a few years ago could easily have been identified, cannot now because the soldier's ID discs or personal effects have disappeared. Often, the grave plunderers leave the bones strewn around the open pits. The problem of pilfering has increased so dramatically in recent years that, more than anything else, a soldier's identification nowadays depends on whether or not the Volksbund can beat the plunderers to his burial place. To discourage grave robbing, the Volksbund appeals to Western travellers — an increasing number of German veterans, relatives of fallen soldiers, and battlefield tourists manages to visit these far-away places — not to buy such booty when offered.

The daily work of the German grave teams in the former Soviet Union is considerably hampered by the vagaries of the Russian climate and terrain — the mosquitoes in swampy areas, the heat and cold, the bad state of roads; by the logistic difficulty of procuring fuel and food; by language problems and bureaucratic chaos, but also increasingly by theft and even armed raids by local bands. Nevertheless, up to 1994, of some 40,000 graves looked for, the search teams managed to find about 20,000, a large proportion of which could be identified.

The policy of the Volksbund is to concentrate the German battlefield dead in a small number of 'Sammelfriedhöfe' (collecting cemeteries) — created either by expanding existing cemeteries or, sometimes, by building a completely new one. The reasoning behind this is of course that it is easier to maintain a few very large cemeteries than many smaller ones.



**In the case of battlefield dead, the Volksbund has decided to create large central cemeteries to which the dead from many smaller cemeteries will be transferred. This valley near Charkov in the Ukraine will become the last resting place for 40,000.**

In contrast to the battlefield cemeteries, the Volksbund has decided to leave PoW cemeteries where they are, unless they are threatened by agricultural, urban or other developments. The exact number of PoW cemeteries in the former Soviet Union is unknown. Estimates vary between 6,000 and 14,000. So far, the Volksbund has found over 600 of them — about 80 per cent of which have survived intact and are accessible. They will be preserved and landscaped according to a simple, uniform design. Each cemetery will have a high stone cross, and a memorial stone on a small paved floor. The burial ground will be marked with symbolic groups of metal crosses, trees will be planted, and the whole will be surrounded by a low fence. One advantage of the PoW cemeteries is that the plunder problem does not exist here, since the PoWs were buried without personal effects or military equipment.

In view of the magnitude of the tasks, the number of Volksbund personnel employed in the East is surprisingly small — on average, no more than about 50 Germans and some 150 hired locals. They do the specialist work of identification and transfers of remains. With other tasks, such as restoration and cleaning-up jobs, the teams receive considerable help from the young volunteers of the many international youth camps organised by the Volksbund, and — since the

Hungarian and Russian authorities allowed them entry in the 1995 — from Bundeswehr soldiers and volunteer reserves. The Bundeswehr also helps out with transport and equipment. Local firms are contracted for the cemetery construction work.

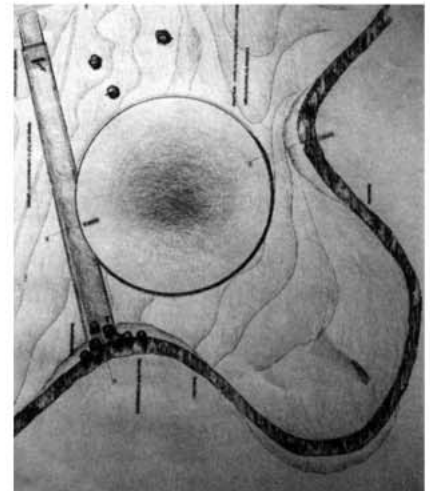
Of course, digging up old cemeteries, identifying the remains, transferring them, and reintering them under their proper name, entails a huge administration. In cooperation with the Deutsche Dienststelle (WAST) in Berlin (the organisation charged with maintaining personal records of servicemen of the former Wehrmacht), who hold the records of 1.8 million soldiers lost in the Soviet Union, the Volksbund has been able to compile lists sorting names of dead according to their army serial number or original field cemetery. These lists are an indispensable tool for the search and recovery teams working in the field.

Rather than work off each Eastern European country in turn — the way it was done in Western Europe — the Volksbund has opted to work in all countries simultaneously.

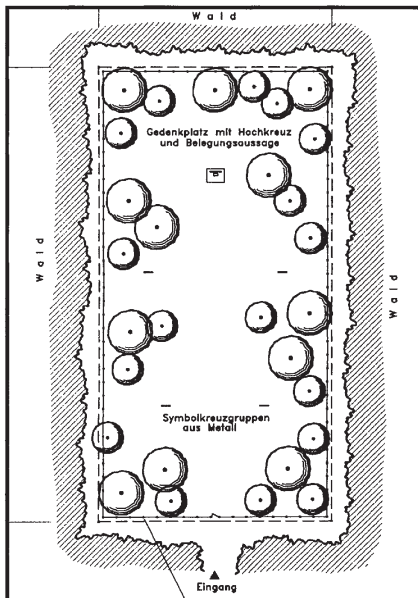
In Russia, faced with the sheer scale of the task before it, the Volksbund has by necessity decided to concentrate its efforts on specific projects. They are neatly divided over the three main battle theatres: in the north the area St Petersburg (Leningrad),



**Left: Surveying the ground for the central cemetery at Rossoshka, one of the three planned around Stalingrad (today Volgograd). The other two will be at Gorodice (some 50 miles to the north) and Krasnoarmesck (50 miles to the south). Right: Each central cemetery will have its own design depending on**



**the lie of the land. This is the plan for the Rossoshka cemetery: from the high cross and memorial at the entrance, an avenue will lead to a large circular burial area surrounded by a wall on which will be the names of those interred. Further along the avenue trees will be planted on the river bank.**



Over a million German soldiers perished in Soviet captivity and they lie buried in thousands of cemeteries strewn all over the Soviet Union. Since hardly any records of them exist, the German search teams have often to rely on local knowledge, and only a few hundred have so far been located. The Volksbund has decided that these PoW graves will mostly be left in situ, the cemeteries being preserved according to uniform

designs, usually encompassing a high cross, a memorial stone, groups of symbolic grave markers, and a surrounding fence or embankment. *Left:* This sketch shows the lay-out for the PoW cemetery at Ikovka in the Kurgansky region of Russia. *Right:* The small PoW cemetery outside a rural settlement at Lynga in the Udmurtien region of Russia (west of the Ural Mountains). Here rest the remains of 30 prisoners-of-war.

Demyansk and Novgorod; in the centre the area around Moscow; and in the south the area around Volgograd (Stalingrad). The central cemetery at Novgorod, originally established by the 1. Luftwaffen-Feld-Division in 1943, and now expanded to contain 20,000 graves was dedicated on September 21, 1996. Other central cemeteries have already been dedicated at Rysku (former East-Prussian Germau) and Salla (on the Finnish border). In the Stalingrad area, there will be three new central cemeteries. After long drawn-out negotiations over the plot of land selected for the first one, at Rossoshka, the first stone was finally dedicated on April 29, 1994. Although the architectural landscaping has since been delayed and the cemetery has still not been officially dedicated, some 12,000 dead have already been re-interred there. In all, there will eventually be some 18 central cemeteries in the Russian Federation, five of them in the Kaliningrad district (the district separated from the rest of the Russian Federation by Lithuania and Byelorussia).

Exact figures for German dead buried in Soviet territories which have now become independent nations — the Baltic States, Byelorussia, the Ukraine, Armenia, Georgia, Kazakhstan, Azerbaijan — are difficult to establish, since these figures are included in the overall figure for the whole Soviet Union.

In the Ukraine, one of the hardest-fought territories of the former Soviet Union, the Volksbund has planned to bring the war dead together in six central cemeteries: at Charkov, Kerch, Kiev, Lvov, Odessa and Sevastopol. The one at Kiev, presently under construction, will eventually contain 40,000 graves.

In Byelorussia (White Russia), there is already a cemetery at Grodno and central cemeteries are planned at Brest, Gomel, Minsk, Mogilev and Vitebsk. To give just one example of the work involved: the cemetery on the edge of Minsk, originally established by a German field hospital and numbering over 2,000 graves, was found to be completely covered by woodland, which will need to be cleared away.

In Estonia, the Volksbund has established good contacts with communal authorities

and cultural funds which enables it to carry through several projects. In all, there will be seven central cemeteries: Pärnu and Viljandi were dedicated in 1993, Kuressaare in July 1996; the others will be at Jõhvi, Narva, Tallinn and Tartu.

In Latvia, the Volksbund was able to open talks with the Riga town authorities even before the country regained independence in 1990, and the restored German PoW cemetery there could already be dedicated in June 1991. In all, there will be six central cemeteries: at Daugavpils, Liepaja, Ogre, Olaine, Riga-Baldone and Saldus.

In Lithuania, there will be five central cemeteries: at Alytus, Kaunas, Klaipeda, Vilnius-Anatakalnio and Vilnius-Zakretas.

Another aspect of the new contacts in the East are the archive records that have become available. Prime among these are the Russian Central Military Archive, which

holds files on some 380,000 German soldiers taken prisoner by the Red Army; and the KGB Secret Archive and the Archive of the October Revolution which together hold records pertaining to some 199,000 Germans interned after the war in the Soviet sector of occupied Germany and later the GDR in the Special Camps of the NKVD. (There were 11 of these camps.) After long negotiations, the Russians in 1992 allowed the German Red Cross to copy the records on microfilm. They are currently being used by the Volksbund, in close cooperation with the Suchdienst (Search Service) of the German Red Cross in Munich and the Deutsche Dienststelle in Berlin, to clear the fate of hundreds of thousands that have been missing since the war — a vast task which will take many years to complete. The copied records were sent to Munich where they are translated using a special computer programme. In this way,



**Dedication of the cemetery at Chernachovsk in the Kaliningrad district on July 6, 1996. Before 1945, Chernachovsk was the German town of Insterburg in East Prussia. In the former garrison cemetery lie 556 German, 165 Russian and 5 Rumanian dead from the First World War, and 1,839 German dead (both soldiers and PoWs) from the Second. The Volksbund plans to bring in the remains of another 2,000 dead here.**



**The break-up of the Soviet Union into various republics forced the Volksbund to negotiate separate war grave treaties with these new nations. The treaty with the Baltic state of Estonia, which regained independence in 1991, was signed in October 1995, but work on the German cemeteries there had already begun earlier. The one at Kuressaare on the island of Saaremaa was dedicated on July 20, 1996. First established in 1942 next to a civilian cemetery, it was partly supplanted by civilian graves and a Soviet memorial after the war. With 633 graves, it will be expanded to contain some 2,500 German dead from the islands of Saaremaa, Muhu and Hiiumaa.**

the Suchdienst is able to work through about 15,000 files a month. One special problem is that the records are mostly in Cyrillic script, with German names having been transcribed by the Russian interrogators, which is a nightmare causing many spelling errors. When the fate of an individual soldier is cleared, his family or relatives are informed. An announcement on television about the new archives, and a mailing sent out to Volksbund members in May 1995, resulted in the Suchdienst receiving 100,000 letters containing some 58,000 inquiries. So far, the Suchdienst has been able to give about 20 percent of these a positive answer.

Although the job at hand in the former Soviet Union is by far the largest and the most difficult, the Volksbund is also working in the other eastern European countries. Here, fortunately, cemeteries have usually survived intact and plundering is far less a problem.

In Poland lie 468,000 German dead from the Second World War, of which 300,000 are known by name. They lie in 19,253 locations, nearly half of them in about 650 cemeteries, located mainly in former East Prussia, in Galicia and around Warsaw and Kielce. Of the 400,000 First World War dead in Poland, only 2,000 have a known grave. After 1945,

hatred against Germany was such that many of the German cemeteries were simply destroyed and razed to the ground. Although there is still no formal war graves agreement between Germany and Poland, the common declaration by the German Chancellor and Polish President of November 1989 and the German-Polish Treaty of 1991 have enabled the Volksbund to begin work on several projects. A joint Polish-German commission went to work, and a working partner was found in the Polish Red Cross. The first dedications took place in October 1991: of the restored First World War cemetery at Joachimów (to which the Second World War German dead from the Warsaw-Powązki Cemetery had been transferred); and of the German plot in the Northern Cemetery in Warsaw. Other central cemeteries have already been started at Przemyśl (next to the restored First World War 'Prussian Mausoleum', where 2,000 rest), Kraków, Poznań and Mława. Since 1994, the Volksbund receives much help from the Polish-German 'Pamięć' (Remember) Foundation.

In former Czechoslovakia (now the independent Czech and Slovak Republics), there are 5,100 places known to have German war dead, 240 of them containing more than 50 graves. In all, there are 3,000 dead from the First and 178,000 (64,000 unknown) from the Second War. Initial contacts with Czechoslovakia during the 'Prague Spring' of 1967-68, about the German cemeteries at Brno and Mariánské Lázně (Marienbad), were rudely terminated by the Russian invasion of 1968. Talks were resumed after the 'Velvet Revolution' of 1989, leading to a regular contact with the Czechoslovak partner organisation 'Pargent' the following year. In Slovakia, there will be six central cemeteries — the first, at Zborov, was dedicated in September 1992. In the Czech Republic, a new central cemetery will be built at Cheb.

In Hungary lie 54,000 German dead from the Second World War, 19,000 of them unknown, and originally strewn across 1,400 different localities. The situation here has been relatively favourable for the Volksbund. Even before the 1993 treaty, the Hungarians allowed them to work on over 20



**The Volksbund has been equally active in the other eastern European countries. In Poland, the new central cemetery at**

**Przemyśl, adjoining the Prussian Mausoleum from the First World War, was dedicated on October 7, 1995.**

cemeteries and expand several of these into central cemeteries. The largest central cemetery, and the only one to be newly built, is at Budaörs outside Budapest with 10,000 graves.

In Rumania are some 53,000 German dead (nearly 18,000 unknown) from the First and 38,000 (3,000 unknown) from the Second World War, originally buried in 730 different places, with another 150,000 missing. First work in Rumania could start in the 1980s, after difficult negotiations with government and town authorities. The threatened cemetery at Braila was moved in 1984, and six others restored in 1984-94. The new central cemetery at Iasi was dedicated on September 21, 1996. Two more are being planned.

In former Yugoslavia, a total of 73,000 German soldiers (17,200 from the First World War) are known to be buried in 4,885 different locations. Another 40,000 are missing. Talks with Yugoslavia were already begun back in 1977, before the general downfall of Communist regimes in eastern Europe began, but these never achieved significant results and the first restoration projects were only begun in 1988. Work in Yugoslavia has of course been seriously affected by the war that wrecked the country in 1991-95. Nothing could be done to survey, let alone protect, German war cemeteries in Bosnia-Herzegovina and in Serbia and Macedonia. Nevertheless, some projects have been carried through. In Slovenia, the renewed German section in Celje cemetery was dedicated in September 1992, and central cemeteries have been opened at Kranj and Ljubana. In Croatia, a small German section was dedicated in September 1992, and central cemeteries have been opened at Pula in 1991; two German cemeteries in Zagreb, completely restored, were re-dedicated in May 1996.

#### WAR GRAVES TREATIES BETWEEN GERMANY AND EAST EUROPEAN COUNTRIES

|                    |                   |
|--------------------|-------------------|
| Russian Federation | December 16, 1992 |
| Georgia            | June 25, 1993     |
| Hungary            | November 16, 1993 |
| Albania            | April 14, 1994    |
| Kazakhstan         | April 10, 1995    |
| Uzbekistan         | April 11, 1995    |
| Moldavia           | October 11, 1995  |
| Estonia            | October 12, 1995  |
| Armenia            | December 21, 1995 |
| Azerbaijan         | December 22, 1995 |
| Latvia             | January 24, 1996  |
| Ukraine            | May 29, 1996      |
| Rumania            | June 25, 1996     |
| Byelorussia        | June 28, 1996     |
| Lithuania          | July 4, 1996      |
| Croatia            | December 9, 1996  |

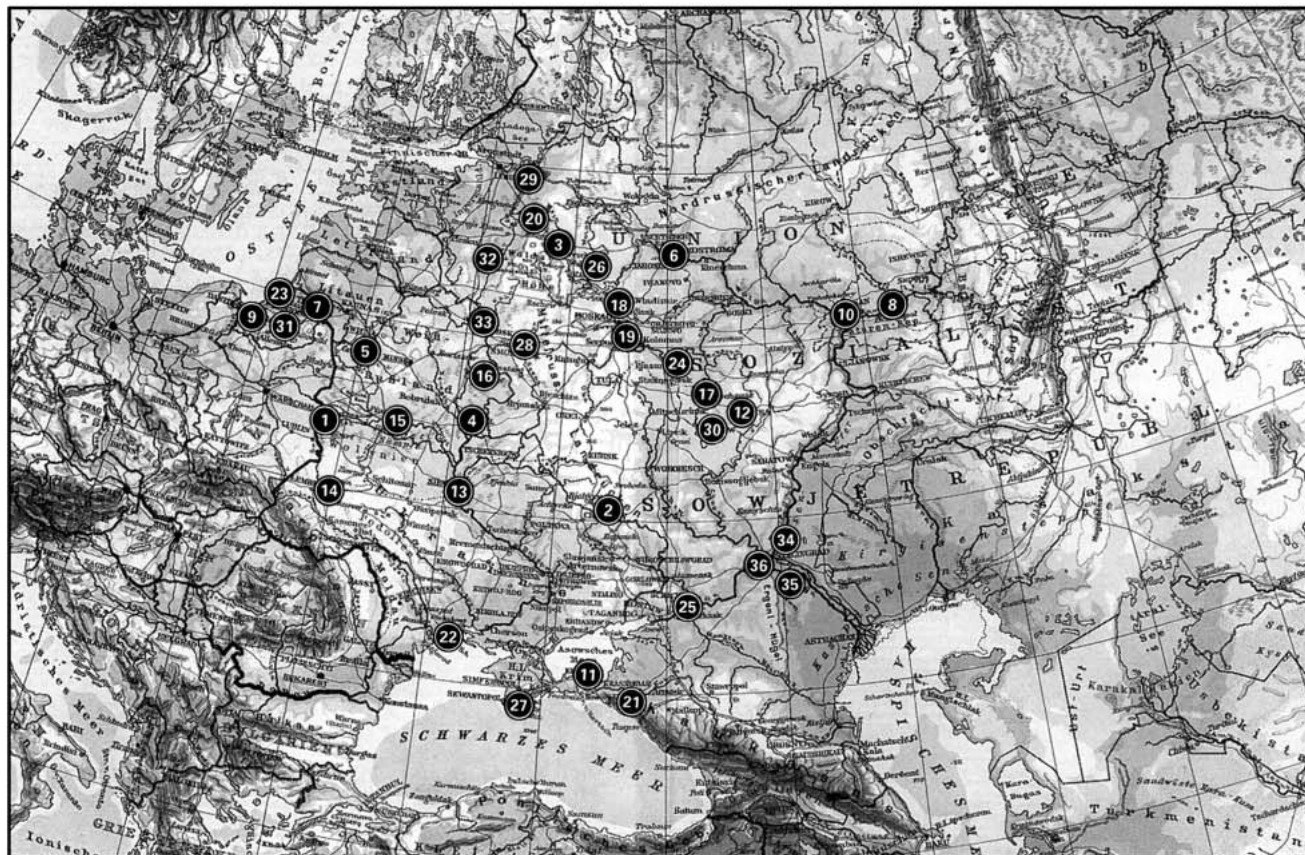
In Bulgaria are an estimated 1,800 German war dead, 500 of them unknown, in 114 locations. Two-thirds of them lie in six cemeteries. Negotiations with the Bulgarian Red Cross were already started in 1988, as a result of which the German section (First World War) in Sofia Central Cemetery could be restored and a plaque erected naming all Germans who fell in Bulgaria. Central cemeteries are planned at Goce Delcev and Petric.

In Albania lie some 3,600 German war dead (1,200 of them unknown) from the Second World War in 173 locations. Despite the Communist regime's policy of isolation, a war graves treaty was signed in April 1994. A central cemetery is planned in or near Tirana.

The Volksbund hopes to finish its work in the East within 15 years — i.e. around 2005. In 1996, the organisation recovered the bones of over 37,000 dead; re-interred over

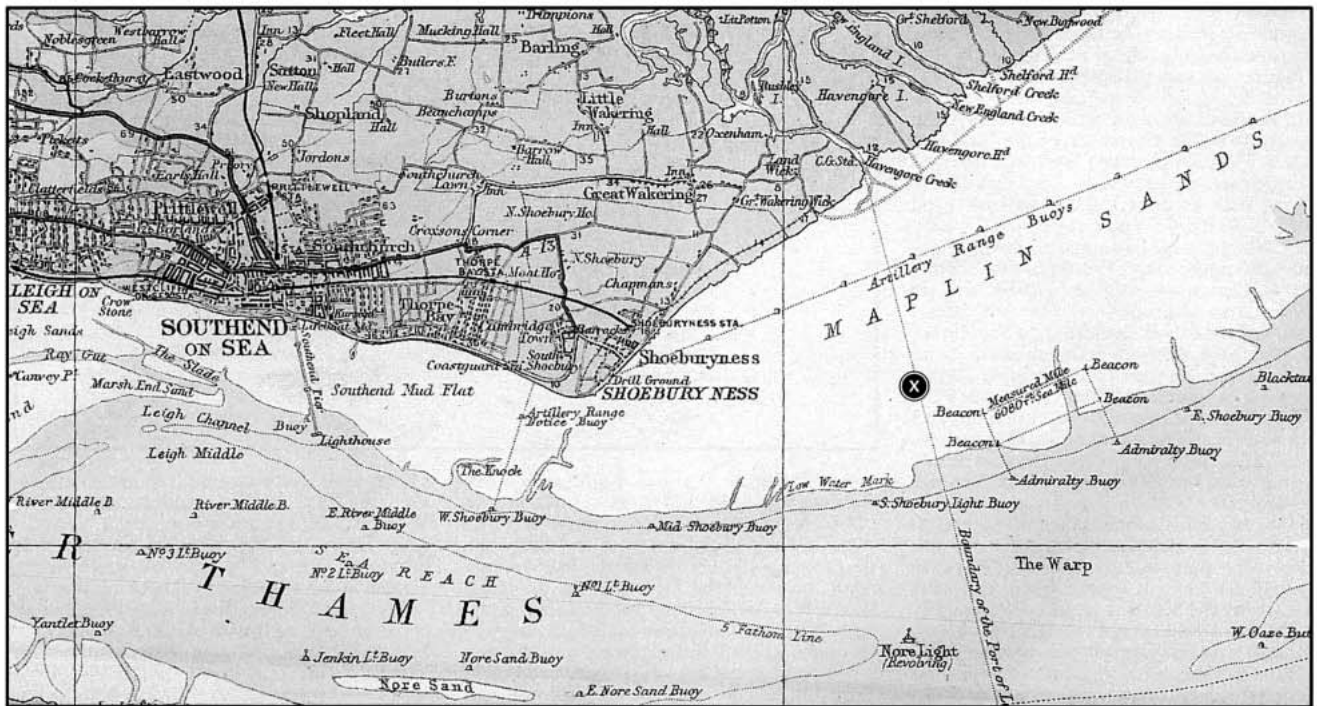
54,000 dead; dedicated nine central cemeteries in the East; and restored First and Second World War Cemeteries in nearly 100 localities. However, the task it still faces is immense. To put it into perspective: in France alone, it took 20 years to concentrate 235,000 dead from 5,000 locations in 22 large cemeteries — in Russia alone, 2.2 million lie in 118,000 localities! The Volksbund is also acutely aware that it will never be able to find all war graves. Many have been plundered, or built over, or replaced by civilian graves, or are being threatened by development projects. All it can do is to try to save as many as possible.

Today, the Volksbund cares for 502 cemeteries all told, 231 of which lie in former Eastern Block countries; 143 of the latter are First World War cemeteries and 43 are PoW cemeteries from the Second World War.



German war cemeteries in Eastern Europe: [1] Brest. [2] Charkov. [3] Demyansk. [4] Gomel. [5] Grodno. [6] Jaroslavl. [7] Jasnjaja Poljana. [8] Jelabuga. [9] Kaliningrad. [10] Kasan. [11] Kerch. [12] Kirsanov. [13] Kiev. [14] Lvov. [15] Minsk. [16] Mogilev. [17] Morschansk. [18] Moscow-Krasnogorsk. [19] Moscow-Ljublino. [20] Novgorod. [21] Novorossisk/Krasnodar.

[22] Odessa. [23] Rusku. [24] Rjazan. [25] Rostov. [26] Rshv. [27] Sevastopol. [28] Smolensk. [29] St Petersburg. [30] Tambov/Rada. [31] Chernachovsk. [32] Velikije Luki. [33] Vitebsk. [34] Volgograd-Gorodice. [35] Volgograd-Krasnoarmesk. [36] Volgograd-Rossoshka. This was the situation as it stood in 1996 but undoubtedly many more cemeteries will be required.



# SECRET OF THE SOUTHEND SANDS

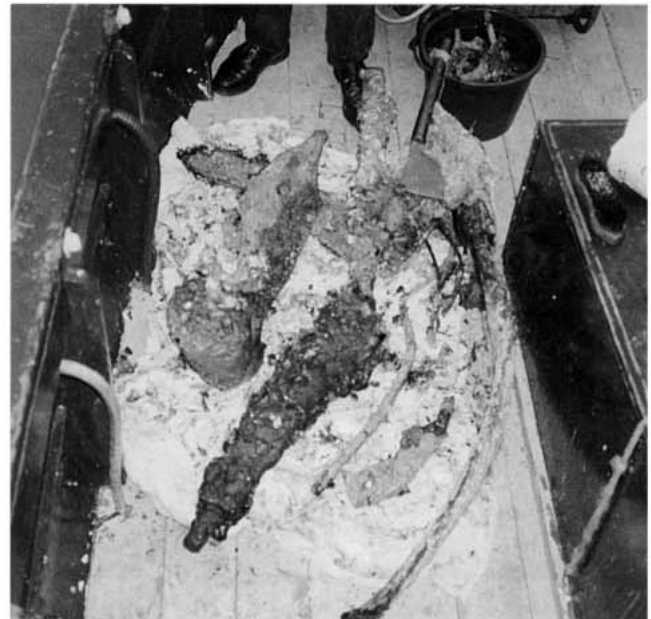
Southend-on-Sea — the so-called Londoner's playground — lies on the northern bank of the Thames Estuary. To the east lies the firing range at Shoeburyness, the location chosen for the ill-fated third London Airport back in the 1970s. The latter proposal was a non-starter from the beginning as the Maplin Sands have been used for proving artillery for over a century and are covered with expended and unexploded shells. Complete clearance of the shifting sands would probably have taken another 100 years and the Royal Engineers had covered only a very small area when the project was abandoned in 1974 (see *After the Battle* No. 3).

Today, most firing at Shoeburyness takes place at high water, the fall of shot being monitored by very accurate radar, the inert test shells being recovered at low tide when the sands dry out. Fishing is permitted when firing is not taking place and it was in July 1997 that Dick Walker, a local fisherman, spotted a piece of metal, looking suspiciously like something from an aircraft, protruding from the water some two miles from land. The chart is marked with many obstructions but nevertheless Dick, with his lifetime interest in aviation archaeology, decided to investigate further at the next suitable low tide which was due in ten days time.

On Tuesday, July 15, accompanied by your Deputy Editor and fellow enthusiast Barry Hammerton, 'landfall' was made on a nearby sandbank. There was only about 18 inches of water covering the spot and, as Barry, Gordon and Dick got closer, it was obvious that it was compacted aircraft wreckage, surmounted by a tightly-wedged stainless-steel oxygen bottle. Part of a propeller blade was also visible. At least two planes are known to have come down on the sands during the war — a Spitfire and a Junkers Ju 88 — although a .50-calibre Browning machine gun lying nearby on the sand seemed to indicate that this particular aircraft could be American.



**Left:** Dick Walker first came across an encrusted piece of metal protruding from the water some two miles from the Thames foreshore near Southend on July 5, 1997 ('X' on the map marks the spot.. Returning at the next low tide ten days later,

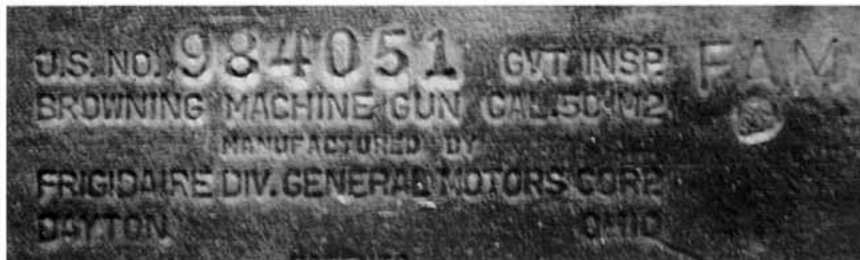


further barnacle-covered items were recovered (*right*) which, turned out to include a Browning machine gun (in the centre) and a propeller blade (on the right). More sinister, jammed on a rudder pedal, was a boot containing human bones.

As the prop blade was pulled from the sand, fragments of what looked like bone came to light, wedged on a rudder pedal.

The tide at this point only gives a 'window' of about 90 minutes and it is extremely dangerous to overstay as one can very easily get cut off by the incoming water. Dick therefore decided to return to carry out further investigation.

Two weeks later, positive proof that the pilot had died in the crash came when a flying boot was discovered still containing the remains of a foot. This put a completely different complexion on things as it confirmed that a missing airman was involved. The provisions of the 1986 Protection of Military Remains Act, requires individuals to obtain a licence from the Ministry of Defence to investigate aircraft wrecks in the UK — such licences always being refused if human remains are known to be present. However, the validity of the legislation has recently been called into question by a Coroner (see *After the Battle* No. 92, page 53) who quite categorically stated that the recovery of dead bodies or human remains is the sole premise of a Coroner and that the Ministry has no jurisdiction over such matters. Dick therefore took the bull by the horns and, bypassing the MoD, telephoned the US Embassy and the local Coroner direct who took charge of the remains.



After cleaning, the Browning revealed its serial number which was checked against US Missing Air Crew Reports (MACR) which list the numbers of the guns fitted. (After being photographed, the gun was thrown back in the sea to avoid any difficulties with Britain's new draconian gun laws). Gun No. 984051 turned out to have been installed on a P-51 of the 479th Fighter Group which had gone missing on December 12, 1944 after taking off from Wattisham.

Whenever an American aircraft failed to return, the US Army Air Force produced a Missing Air Crew Report (MACR). Among many other details, these reports list the serial numbers of the guns fitted to the aircraft, as well as that of the engine, and are therefore an important method of proving the identity of the machine concerned. Dick passed the number on the Browning to veteran aviation historian Alan Brown, who quickly established via his network of contacts that machine gun No. 984051 had been

fitted to a P-51B-10-NA Mustang fighter serial No. 43-7157. A check on the appropriate MACR revealed that the aircraft in question had failed to return from a training flight over the Thames Estuary on December 12, 1944, while being flown by 2nd Lieutenant Robert B. Hymans of the 479th Fighter Group who was still listed as missing.

Dick soon had a copy of the MACR in his hands. The senior Flying Control Officer at Station F-377 (Wattisham, near Ipswich — see *Airfields of the Eighth Then and Now*) at

11304

~~CONFIDENTIAL~~

WAR DEPARTMENT  
HEADQUARTERS ARMY AIR FORCES  
WASHINGTON

MISSIE AIR CREW REPORT

IMPORTANT: THIS REPORT WILL BE COMPILED IN TRIPPLICATE BY EACH ARMY AIR FORCES ORGANIZATION WITHIN 48 HOURS OF THE TIME AN AIR CREW MEMBER IS OFFICIALLY REPORTED MISSING.

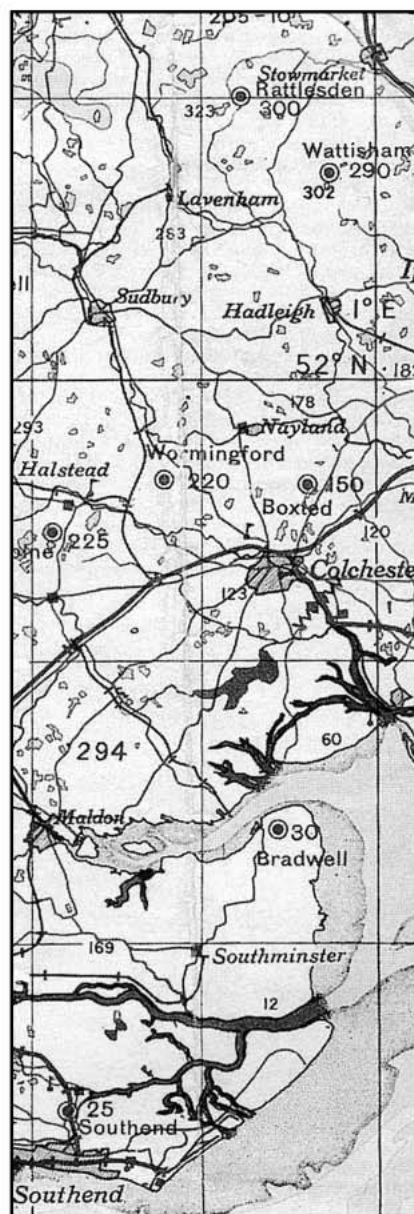
1. ORGANIZATION: Location, by name Wattisham; Command or Air Force 8th  
Group 479th FG; Squadron 437th FS; Detachment
2. SPECIFY: Place of Departure F-377; Course 25 mile radius  
Target or Intended Destination F-377; Type of Mission Alt. Training
3. WEATHER CONDITIONS AND VISIBILITY AT TIME OF CRASH OR WHEN LAST REPORTED:  
Visibility 2,000 yards, ceiling 1,400 feet, wind 10 miles W to NW
4. GIVE: (a) DAY 12 Month Dec, Year 1944; Time 1200 and Location United Kingdom  
of last known whereabouts of missing aircraft. Vis. of F-377  
(b) Specify whether aircraft was last sighted (X); Last contacted by  
radio ( ); Forced down ( ); Soon to crash ( ); or Information not available ( ).
5. AIRCRAFT WAS LOST, OR IS BELIEVED TO HAVE BEEN LOST, AS A RESULT OF: (Check only one) Enemy Aircraft ( ); Enemy Anti-Aircraft ( ); Other Circumstances as follows: Unknown
6. AIRCRAFT: TYPE, MODEL AND SERIES P-51B; AAF Serial No. 43-7157
7. NICKNAME OF AIRCRAFT, if any None
8. ENGINES: Type, Model and Series V-1650-1; AAF Serial  
Number (a) V-324869 (b)
9. INSTALLED WEAPONS (Furnish below Make, Type and Serial Number)  
a. 984346 GM b. 982447 GM c. 984051 GM d. 982416 GM  
e. f. g. h.
10. THE PERSONS LISTED BELOW WERE REPORTED AS: (a) Battle Casualty  
or (b) Non Battle Casualty X
11. NUMBER OF PERSONS ABOARD AIRCRAFT; Crew 1 Passengers 0; Total 1  
1. Crew Position (Last Name First) Rank Serial Number Current Status  
1. PILOT, HYMAN, ROBERT B. 2nd Lt. 0-719350 Missing
12. IDENTIFY BELOW THOSE PERSONS WHO ARE BELIEVED TO HAVE LAST KNOWLEDGE OF AIRCRAFT, AND CHECK APPROPRIATE COLUMN TO INDICATE BASIS FOR SAME:  
Check only one Column

| Name in Full<br>(Last Name First) | Rank    | Serial   | By<br>Radio | Contacted<br>Last<br>Sighted | Saw<br>Crash | Forced<br>Landing |
|-----------------------------------|---------|----------|-------------|------------------------------|--------------|-------------------|
| 1. HYMAN, ROBERT B.               | 2nd Lt. | 0-719350 | X           |                              |              |                   |
| 2. HILL, GLENN W.                 | 2 Lt.   | 0-719333 |             | X                            |              |                   |

(OVER)

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Dick was well aware that if he notified the finding of the human remains to the British Ministry of Defence, the latter would immediately invoke the sanctions of the Protection of Military Remains Act which would mean that the rest of the pilot would most probably disappear again under the sand. He therefore decided to go direct to the Americans whose dedication to the recovery of their war dead is second to none. After depositing the fragments he had recovered with the Coroner at Southend, Dick telephoned the US Embassy in London with his evidence and, within hours, the USAF in Germany had been

tasked with the recovery. On September 1, Richard Harrington, a forensic anthropologist arrived in Britain from Hawaii, where the US Central Identification Laboratory is based, for a preliminary investigation. After Dick showed him the pilot's watery grave, Richard decided not to wait for personnel to be drafted in from Germany but to proceed with a recovery operation as soon as possible. The next low tide was due early on September 17, and by 6 a.m. the recovery party had been transported over two miles across the sand of the Thames Estuary by tracked personnel carrier to the water's edge.

the time was Major William B. Hugill who stated that 'I was duty officer at 1230 hrs on the 12th of December 1944 when Lt Hymans, 435th Fighter Squadron in J27 was due to return to base from a routine training flight. The other two aircraft in flight landed at 1235. Lt Hymans was last seen NW of the London area. I endeavored to contact Lt Hymans on both "A" channel and "D" wing training channel but without success on either. We then called all three fighter wings for information, also the RAF 11 and 12 Groups and ROC [Royal Observer Corps] in the London area, but none had heard anything concerning the aircraft or pilot. Overdue action was started at 1533 hours.'

The MACR report also included a statement from 1st Lieutenant Billy C. Means: 'On the morning of December 12th, at approximately 1045 hours, three of us took off from the home field on a high altitude training mission. We climbed to 21,000 feet, when my engine began to surge from 40 to 60 inches Hg [of mercury]. I tried several times to get by this point, but to no avail. We then chased some bombers south for a short while and then we began to simulate combat. At



As the tide dropped the last few inches, a portion of the wreckage became visible. Richard Harrington, on the right, photographed the spot.



Unfortunately, although the hire of a tracked excavator had been arranged with the Defence Test and Evaluation Organisation, which has jurisdiction over this part of the estuary which

is used as a test-firing range, on the day in question only a rubber-tyred digger was available. Its stabilisation legs soon sank into the soft sand.





**It was not long before the digger became well and truly bogged in at which point one of the hydraulic hoses to the front activator arm burst. Thereafter, Dick (in the wet suit) had to feel beneath the water with his hands, watched closely by Richard Harrington.**

approximately 1130 hours, I pulled out of a shallow dive right on top of a cloud deck. Up to this time, Lt Hymans had been right on my tail, but on looking back I could note but one plane and it was piloted by Lt Hill. I immediately called Lt Hymans, but received no answer. Lt Hymans was Lakeside Green Three, and at one time I thought I heard Colgate in contact with a Lakeside Green Three, and giving him a steer of 200 plus degrees to a clear spot, but that was all I could understand. Lt Hill and I circled the spot where we had last seen Lt Hymans for about five minutes, and then we took a 90 degree heading and held it for approximately ten minutes. After we had been on this course two to three minutes we received four or five bursts of flak off to our left. We then let down through a break in the clouds and saw that we were over water. We took a 290 degree holding and in about five minutes we made landfall in at Southend. We then turned north and flew up the coast to Ipswich Bay, then home, where we landed at 1230 hours.'

No reason was ever discovered for Lieutenant Hymans departure from the formation and nothing was ever found to indicate



where he had crashed. The failure to communicate by radio could indicate he had been overcome by oxygen failure — a not-unusual cause of unexplained crashes during the war. Now, over 50 years later, the sea had given back the smashed fragments of his fighter ... and another wartime mystery was solved.

Dick's find was notified by the American Embassy to the USAF Mortuary Service in Germany and the Central Identification Laboratory (CIL) at Hickam Air Force Base, Hawaii, (see *After the Battle* No. 66, page 47). Forensic anthropologist Richard Harrington of the CIL was assigned the case and he immediately flew to Europe to carry out an investigation. When he interviewed Dick on September 1, the latter explained his reasons for short-circuiting the normal procedure. Dick said he felt that had the British Ministry of Defence become involved, it would have immediately embargoed a recovery and, by the time matters had been resolved, Lieutenant Hymans might well once again have disappeared under the sand. The Southend Coroner had also explained to Dick that jurisdiction for foreign service personnel rested with the respective government.

The United States is now renowned for the extraordinary lengths it will go to recover its war dead, and to give each serviceman a military funeral according to the wishes of the next of kin. Consequently, after having been shown the site by Dick on September 3, Richard Harrington made immediate arrangements with Major Gerry Collins of the Defence Test and Evaluation Organisation (DTEO), the body which controls the firing range, to effect a recovery operation. The next suitable tide would occur in the middle of September so plans were laid for an early start on September 17. Normally, specialists in the recovery of human remains would have been brought in from the US Army in Germany but, in view of the urgency, plant was made available by the DTEO while Dick brought in two additional fellow enthusiasts to help with the recovery of the wreckage.

At 5.30 a.m. on the 17th, the troops, your Editor included, marshalled at Shoeburyness where a Lance tracked ex-missile launcher and a JCB stood waiting. The drive out across the sands in the moonlight was stunning as the drivers followed directions



**Left: Larger pieces of compressed wreckage were towed to dryer land by the Lance. Right: Parachute shroud lines — the tell-tale sign that the cockpit area had been reached. Richard took charge of all the human remains which were mainly in the form of smashed pieces of bone. However, there is no doubt**



**about the identity of the pilot and the next of kin will be offered a burial in a National Cemetery in the USA. Lieutenant Hymans is — or rather was — the only American crewman who was still missing in the United Kingdom.**



radioed from the shore-based radar station. As we neared the edge of the sea, a plastic marker bottle, fixed by Dick to the wreckage, pinpointed the spot. There was still a few minutes to go before the tide would be at its lowest, although the wreckage would not be completely free of water.

At 6.20 a.m., the digger began scraping sand from around the wreckage which was now seen to be heavily compacted, indicating that the machine had dived vertically from nearly 20,000 feet. While pieces of wreckage were put to one side, Richard Harrington carefully examined each scoopful of sand for human remains. Soon, the intact parachute and shroud lines appeared with more lumps of compressed metalwork indicating that the cockpit area had been reached.

At this point, the JCB moved its position to attack the wreckage from a new angle. It was a difficult task as the sand did not provide a firm base for the supporting extendable legs which soon disappeared beneath the water. With the machine sinking at its front end, the driver attempted to reverse out of an increasingly precarious situation only to become firmly bogged in, at which point one of the hydraulic hoses burst. The Lance was quickly linked up to pull the digger from its watery grave but this attempt only resulted in forcing it even deeper into the cloying sand.

**As the tide turned, it was now a race against time. Dick was now feeling blind beneath the muddy water but still more chunks of wreckage were brought out, including part of one of the fuel tanks.**





Suddenly facing a real emergency, for by now the tide had turned and the water level was rising fast, a radio call was made to base for a rescue operation to be mounted. By the time two more Lances and the DTFO's Centurian AFV recovery tank appeared, the water was half-way up the cab and too deep to use the tank. Racing against the clock to connect the tow in waist-deep water, it was obvious that if the combined pull of the two Lances failed, there would be no option but to abandon the digger to its fate.

And that is exactly what happened. Fortunately, your Editor had had the foresight to equip himself with his chest waders and so was able to picture the forlorn JCB while the rest of the party retreated further up the sand.

Once back on dry land, all the wreckage was carefully sifted and cleaned under the watchful eye of Richard Harrington. He claimed partial satisfaction with the amount of human remains recovered but held his options open for a possible further operation. However, as no visible wreckage had been left protruding above the sand, there would now be an added difficulty on any future attempt of locating the precise spot, working within the tight time period allowed by the tide.

After the remains were handed over to the local Coroner, arrangements were made for them to be transferred to the US Mortuary Service in Germany from where they would be escorted with all due reverence by a soldier to Hawaii for evaluation before being released for burial. And there, for the present, the story ends . . . yet had it not been for the watchful eye of Dick Walker, Lieutenant Hymans might never have been found . . . remaining just another unsolved mystery of World War II.

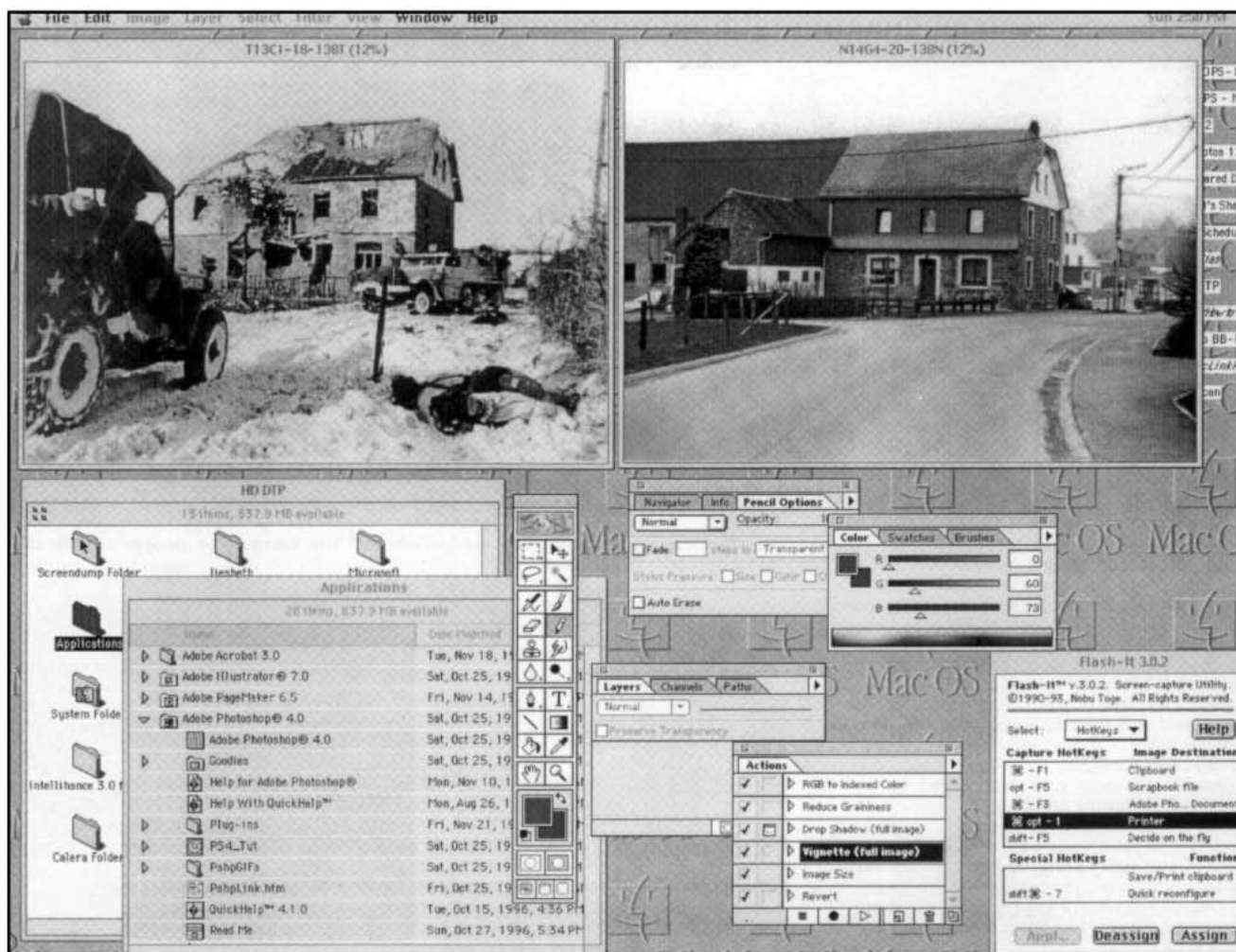
**As the recovered wreckage was loaded aboard the Lance, the digger slowly disappeared beneath the waves . . .**



**. . . but here comes the cavalry . . . and two Lances were soon in action . . .**



**. . . but to no avail and the machine had to be abandoned. It was pulled from its watery grave the following day.**



# THE BATTLE OF THE BULGE THROUGH THE LENS

As an American expatriate who has lived in Belgium for over seven years, working as Vice-President of European Operations for a large American multi-national health care company, I have come to know and enjoy the

country. My family and I have benefited a great deal from living and working in Europe. It offers a rich cultural lifestyle and a diverse environment for raising children. The town which we call home, Waterloo, is

By Philip M. Vorwald

itself steeped in cultural and military history. Having studied and enjoyed military history



Philip Vorwald's unique project — which is to be the subject of an *After the Battle* 'Through the Lens' book which we plan to publish later this year — should more accurately be titled: 'Through the Lens and Computer'! Not only has Philip rematched every comparison taken by Jean Paul Pallud in *The Battle of the Bulge Then and Now* (which we published in 1984) 50 years after the battle, but he has found the locations of many additional pictures for which he has taken new 'now' shots. He has also strived to achieve, where possible, weather matching — something your Editor tried back in 1973 for *After*

*the Battle No. 4* but found such an obstacle. Then, Philip has 'massaged' the hundreds of comparisons with the latest computer technology to make them not only instantly accessible on CD, but catalogued and indexed so that they can be shuffled on the screen in different ways. When your Editor viewed Philip's impressive achievement, there was no question that it should be made available to readers as a complementary publication to Jean Paul's masterpiece. *Top*: Faymonville, Belgium 1945-1995. *Above*: Weather match on the Belgian border between Bastogne and Wiltz.



**Known location, new comparison.** *Left:* Gonderange, Luxembourg, 1944. A medical ambulance of the 5th Medical Battalion meets its fate against a tree on Christmas Day, 1944. All occupants were killed in the accident. This is a 'reverse angle'



**photograph of a more famous head-on shot of the same incident.** *Right:* Gonderange, Luxembourg, 1996. A sunny Sunday morning belies the tragedy site 50 years on, the houses and tree felled in the name of progress.

for some time, the timing was indeed fortuitous when we first arrived in Europe in September of 1990, coinciding with the beginning of '50-year anniversaries' of the major battles and events of the European theatre in World War II. I looked forward to retracing such historic military moments on the actual fields of battle with a few of my closest friends. I could not have known that such an interest would set in motion a two-and-a-half-year project, beginning on a snowy day in La Gleize, Belgium, on December 28, 1994 and ending in the bright sunshine alongside the N34 outside of Wardin, Belgium, on March 23, 1997.

Of all the battles in Europe, the one campaign which has always captured my imagination has been La Bataille des Ardennes. Remaining to this day the largest battle series ever fought by the US Army (including those of 'Desert Storm'), its ferocity and high drama were matched only by the appalling conditions under which it was fought. As 1994 drew to a close, I found myself setting out to visit some historic battle locations to be marked by 50-year anniversaries in Belgian villages, towns and cemeteries.

My initial intent was to simply capture a few of the sombre remembrances with a close friend, using Jean-Paul Pallud's renowned 1984 publication *The Battle of the Bulge Then and Now* as an historic topical background guide. Having visited Normandy the previous summer for the D-Day remembrances, it then dawned on me that the his-

torical photographic record of the Battle of the Bulge itself could (and should) likewise be captured on a 50-year anniversary timescale. Being an amateur photographer, as well as living virtually 'on-site' to these locations, Jean Paul's 1984 *After the Battle* publication proved to be the spark which set me off on my two-and-a-half-year project.

Before detailing the project, and the feelings and techniques which lay behind it, a brief summary may be in order. I have re-shot virtually every photographic comparison in Jean Paul's book on a '50 years later' timescale. I then proceeded to review many other published and unpublished sources of photographs relating to this battle campaign. Local archives in certain villages were particularly useful, and I captured these new additional comparisons as well. The entire project in turn was directed by and catalogued within an organisational framework which allowed greater ease of study. Finally, advanced digital techniques were used to optimise and store each individual comparison. At the end of the project, I finished with over 331 'then and now' comparisons on the Battle of the Bulge at the 50-year anniversary stage, a total of over 662 photographs, having both updated and expanded the 1984 publication of the same battle campaign.

#### REFLECTIONS DETERMINE TECHNIQUE AND APPROACH

As the project began to unfold, I realised that many of the complex feelings associated with photo sets in the 'then and now' format

were in fact closely linked to the actual accuracy of the comparisons taken; the 'better' the comparison, the greater seemed to be the 'focus' on what had occurred, a sort of 'ageless, time-continuance' effect. Since this sort of effect is what the true 'then and now' format is indeed all about, I studied the photographic comparisons I had taken early on for clues as to why some comparisons seemed to be more powerful than others.

Apart from the obvious influence of the photo's content itself, three characteristics became readily apparent. First, a photographic comparison seemed to have the maximum impact when the comparison was rendered as accurately and as perfectly as possible, in terms of image ratio, angle and composition. Such accuracy tended to 'free the eyes' to focus on the entirety and impact of the site itself, without visually seeking to 'adjust' the final site alignment. Second, the impact was greatest when either the location had not changed at all, or had changed so substantially and, given the photo content, either tragically (a children's playground on the site of a massacre), ironically (a hair salon where soldiers once bivouaced) or majestically (flowers blooming in a field where a destroyed Panther once sat burning). The third and most important comparison aspect, which in fact links the previous two for the best visual impact, was something that jumped out of the wartime photos when compared 50 years later: the weather. To provide the best possible timeless comparison, you had to match the weather.



**New location, new comparison.** *Left:* Troisvierges, Luxembourg, 1944. Elements of the US 28th Infantry Division march down the Rue d'Asselborn as they enter the city, to the delight of the local inhabitants. History records the lieutenant receiving a flower from a child named Jean Barbel, as her parents



**look on.** His buddy smiling at the Signal Corps photographer completes a perfectly touching and poignant moment in war. *Right:* Troisvierges, Luxembourg, 1996. A calm, mild day finds the Rue d'Asselborn sleeping peacefully on a Sunday afternoon. They came this way.



The overall approach was to capture as many photographic comparisons as possible on the Battle of the Bulge in a systematic, accurate manner at the 50-year anniversary stage. These comparisons were to be gathered according to a categorisation framework, and captured on multiple types of media for four major reasons: comparison archiving, flexibility in image manipulation, ease of reproducibility / dissemination and incorporation into further avenues of electronic media production. To meet all of these goals it quickly became apparent that, beyond standard photographic techniques and processing, computerised imaging, with all of its possibilities and speed, would have to be utilised. Indeed, for many classic dark-room processes, it replaced them altogether.

#### Comparison Archiving

Proper archives are mandatory for a project of this size. Traditionally, storage of photographic negatives are the core of such archives, and these were indeed kept in archival quality storage conditions. Yet rapid visualisation of such archives can be tedious and expensive. For this project, beyond the original negatives, all photographs were scanned into a photographic relational database and saved onto two types of digital media: removable mass-storage cartridges and CD-ROMs. Hence, any photograph could be rapidly found, displayed, and printed in quantity on high-quality, high-resolution laser printers or displayed on a variety of computers.

The Wehrmacht's finest, a forlorn Panzer V-Sd.Kfz. 171-Panther, Type A, prepares to go under the Photoshop knife on a high-end PowerPC Macintosh. All photographs were taken on location using Kodak T-Max 400 professional black and white film and printed on Kodak Poly-Max RC paper. Each photograph was then scanned at a 600 x 600 dpi resolution. For perfect comparison rendering using digital techniques, each 11 Mb photo file was first sized and cropped under Photoshop, then enhanced and filtered using a variety of plug-in modules such as Extensis Intellihance 3.0 and PhotoTools 1.1. Following such composition, all photographic image files were then saved under the Tagged Image File Format, or TIFF file, to enable cross-platform use, and finally burned onto CD-ROM. The use of these two major techniques enables each CD-ROM to be read and used by a variety of computer platforms and imaging software. Further, photographs can be selected and printed at random and in quantity on high resolution printers, or incorporated into further multi-media project such as Web sites and pages. Philip's entire project collection comprises 662 photographs on a series of 12 cross-platform CD-ROMs.

**Known location, known comparison.** *Left:* Krinkelt-Rocherath, Belgium, December, 1944. Smashed remains of two Panther tanks, one with its barrel sheered clean off at the turret, lie smouldering in front of a staid house in Krinkelt-Rocherath. These beasts of war belonged to 3. Kompanie, I. Abteilung, SS-Panzer-Regiment 12, which entered the twin villages on the morning of December 18, 1944 amidst daring dawn bazooka attacks by US forces. *Right:* Krinkelt-Rocherath, Belgium, December, 1994. Fifty years later, almost to the day, the dawn breaks in a similar cold mist. Where pitched tank battles once raged in the very streets of the village, there remains only stillness and silence.

Beyond the physical storage of all photographs on cartridges and CD-ROMs, it is necessary to produce a systematic catalogue of all photographs that can be easily reviewed and arranged according to classifications. The program of choice used for archiving such a large number of photographs was Extensis Portfolio 3.0, for either Windows or Macintosh. This program creates custom catalogues and 'gallery views' of all photographs, combining the entire set (via the use of photo 'thumbnails') into a much smaller single catalogue file. It is then possible to view all 662 photographs within a single 4.2 Mb file, which is capable of being sorted by a variety of keywords.

#### Flexibility in Image Manipulation

Storing all comparison photographs on two types of digital media provided the flexibility required to render the best comparisons possible, in terms of photo size, ratios, cropping and detailed rendering. As stated above, this would enhance the 'then and now' effect. Further, virtually any photographic effect, be it literal or 'filtered', could

be applied to the digital photo file and printed rapidly. Size, resolution, file format and quantities could all be controlled and archived.

The programme of choice used, of course, was Adobe Photoshop 4.0, the industry standard for digital photo manipulation. The huge capabilities of this massive program were then even further extended by the addition of the programme Extensis Photo Tools 1.1 and Extensis Intellihance 3.0, both of which operate inside Photoshop's code structure. The combined power of these three programs was enormous, enabling virtually any effect to be obtained.

#### Ease of Reproducibility

With digital storage and electronic databases, each photograph can be quickly printed via laser printers or sent digitally around the world through various electronic means, such as the Internet. To render such techniques viable, digital scanning of all photographs was done at very high resolutions, to compete effectively with those of actual photographs.



### Incorporation into Further Media Production

The maturation of sophisticated computer layout and page manipulation software such as QuarkExpress and PageMaker, when combined with the fastest personal computers of today, make it routinely possible to produce press-ready files for bureau printing. Yet beyond these standard printing techniques, digital imaging makes it possible to imbed photographic images into Web pages, Web sites, and other forms of electronic dissemination, such as CD-ROMs. Further, the variety of digital file formats enable such files to be exchanged 'across platforms' with no quality loss, either on a PC or Macintosh. All of these techniques can truly leverage the impact of 'then and now' historical studies, all the while rendering them as accurately or as creatively as possible, in quantity, and in different media formats.

### MASTER DATABASE

An initial Microsoft Excel 5.0 spreadsheet served as my master photo comparison listing during the field photography itself. This listing was divided into 15 sections of information, such as location, date, negative code number.

### COMPARISON CATEGORISATION

After having taken 331 'then and now' comparisons from as many historical photos I could locate, each comparison was then catalogued into one of four main categories. Since the project began as a 50-year update to the *Battle of the Bulge Then and Now*, these categories compared either to those locations within the volume or to those in addition (new) to it:

#### 1. New Location, New Comparison

This group of 50-year comparisons were taken on sites not identified in the 1984 edi-

tion, hence providing new comparisons. Many of these original photos were found either in a variety of lesser-known publications on the battle, or from local sources.

#### 2. Known Location, New Comparison

This group of 50-year comparisons was taken on known locations previously identified, but new comparisons of new historical photographs were taken in the same village or town. These comparisons also included either 'corrected' comparisons from the 1984 edition (such as the road angle and spot location of the Ruy-Neuville Tiger II on page 284), or a new comparison in a known location which could not be found in the 1984 edition, yet was subsequently found at the 50-year stage (such as the SdKfz 161/3 Möbelwagen in Hoscheid, page 474, going unidentified in 1984, and found in the course of the project on May 27, 1996, thanks to a local photo source.)

#### 3. Known Location, Known Comparison

This group of comparisons provided the documentation of virtually all known previous Battle of the Bulge comparisons from the 1984 edition, now taken at the 50-year stage. While many of these sites have not changed substantially, quite a number had changed dramatically, and usually to a striking effect. And a few that had compared poorly in 1984, usually due to overgrown trees or obstacles, had actually 'reverted' to better comparisons once again when these obstructions were removed between 1984 and 1995!

#### 4. Known Location, Known Comparison, Weather Match

Perhaps the most striking of all 50-year comparisons taken were those in which the weather was able to be matched as well.

Most of these were 'original snowfall' comparisons and, when optimally lined up and cropped, provided perfect comparisons.

Readers of *After the Battle* magazines and books know well the impact and importance of the field work that goes into each of them. Their historical value is an unquestioned contribution to the respectful and scholarly remembrance of military history. It is the opinion of the author that many other 'then and now' classic sets, volumes and books can gain further appreciation through the use of additional technologies. Such technologies will show the dramatic, emotive effects of the 'then and now' format, the results of superb work by many dedicated photographers, to an even wider worldwide audience.

### SUMMARY

Between December 1994 and March 1997, I have meticulously documented the photographic history of the Battle of the Bulge at the 50-year anniversary stage, including virtually all of the 1984 *After the Battle* edition, along with new locations, new comparisons, weather-matches and corrected comparisons. Utilising the latest digital imaging techniques, this anthology can be managed with accuracy, speed, and low cost.

The author welcomes any inquiries from dedicated *After the Battle* readers, and particularly would like to correspond with those individuals willing to assist in the creation of a Battle of the Bulge historical Web site. Those interested can contact the author, Philip M. Vorwald, at Avenue Marie-Louise, 91, 1410 Waterloo, Belgium.

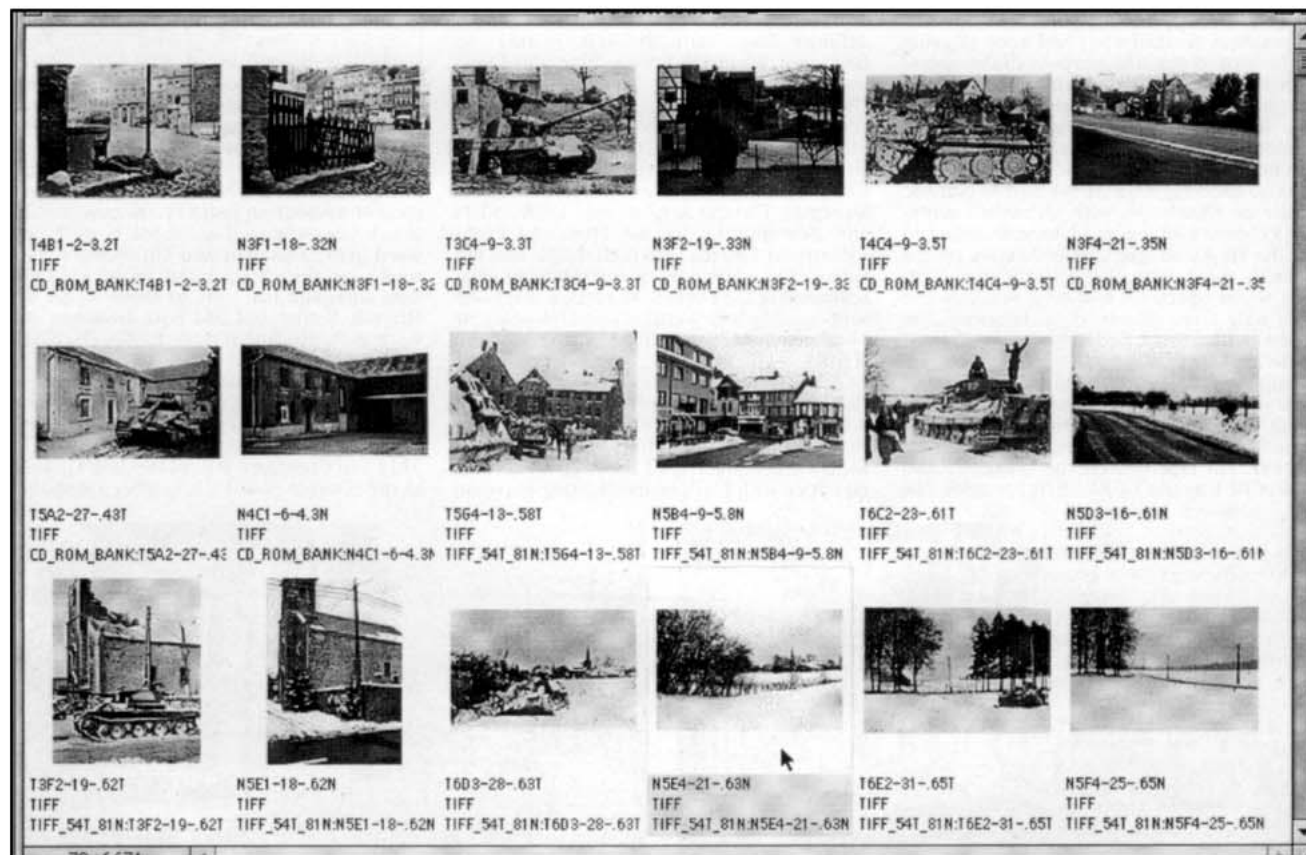
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Photographs on Philip's CDs can be sorted on the screen in different sequences according to preference: i.e. all pictures featuring Tiger IIs; all Bastogne pictures, and so on. Philip will be including hundreds of comparisons in *The Battle of the Bulge — Through the Lens* and we are also considering the econom-

ics of making his archive available on CD for the really dedicated aficionado. Meanwhile, as Philip begins work to assemble his book, he would be pleased to hear from readers with thoughts, suggestions, or just to share information, on the Ardennes battle. His contact addresses are given above.



On October 20, 1944, in the middle of the prolonged Scheldt campaign, occurred one of the largest accidental explosions of the whole North-West European campaign when over a ton of nitro-glycerine exploded at a farm near IJzendijke in south-west Holland. The explosion killed 46 and wounded another 38

and decimated an RE assault squadron of the 79th Armoured Division which was preparing itself for the final attack on Breskens. (Though often spelled in English accounts as 'Yzendyke', the village name's proper Dutch spelling is with the diphthong 'IJ'.) (via C. de Dobbelaere-Govaert)

# THE IJZENDIJKE EXPLOSION

By Karel Margry

By October 20, 1944, the Allied fight to clear the south bank of the Scheldt river (Operation 'Switchback') had been slogging on for two weeks. The purpose of the operation was to clear up the 'Breskens Pocket', the area of desolate polderland enclosed by the Scheldt in the north and the 25-mile stretch of the Leopold Canal in the south.

The 3rd Canadian Infantry Division (Major-General Dan Spry) had begun the battle on October 6, with an assault across the Leopold Canal near Maldegem, followed on the 9th by an amphibious landing on the Scheldt coast west of the Braakman inlet. The whole operation had been scheduled to take only three or four days. However, the German 64. Infanterie-Division proved tenacious and in 12 days of fighting, the Canadians — struggling through mud and water, over dikes and streams, through desolate villages, and over roads that were cratered and mined — had only cleared about half the pocket. On October 17, the Queen's Own Rifles of Canada of 8th Brigade took the

small town of IJzendijke. The Germans had now fallen back to a shorter, secondary defence line. With its left resting on Breskens, it ran via Schoondijke and Oostburg to Sluis, and from there along the Sluis Canal and Leopold Canal to the coast.

General Spry's plan for breaking the new line comprehended, first, the capture of Breskens and Schoondijke by the 9th Brigade. Breskens was to be assaulted by the Stormont, Dundas & Glengarry Highlanders and Schoondijke by the Highland Light Infantry of Canada. Thereafter, 7th and 8th Brigades would follow up and clean out what remained of the pocket. The attack was to be supported by heavy artillery and full-scale air bombardment by medium bombers of the RAF.

The plan was to make considerable use of the special armour of the British 79th Armoured Division. For the attacks on Breskens and Schoondijke, 9th Brigade was assigned B Squadron of the 22nd Dragoons, equipped with Flails (mine-clearing Sherman

tanks); B Squadron of the 141st RAC, equipped with Crocodiles (flame-throwing Churchill tanks); and 284 Armoured Assault Squadron, RE, equipped with AVRE (Assault Vehicle Royal Engineers) tanks.

Orders for the new operation were issued on October 19th. That same day, the three special armour squadrons assigned to the attack began moving to the 9th Brigade forward area. The Flail and Crocodile squadrons were already operating in the 3rd Division area, and had only to move to the 9th Brigade sector, but 284 Squadron was still back at Waterlopoen near Eeklo (Eecloo), south of the Leopold Canal.

One of the 12 armoured assault squadrons in the 79th Division, 284 Squadron was part of the 6th Assault Regiment, RE, of the division's 1st Assault Brigade, RE. Formed from 284 Field Company, RE, of the 38th Division in the summer of 1943, it had been stationed



IJzendijke lies in Zeeuws Vlaanderen, that part of Holland cut off from the rest of the country by the Scheldt estuary. Captured by the Canadian 3rd Division on October 17th, the



town was to be the starting point of the final attack to clear the Breskens Pocket. Canadian photographer Lieutenant Donald Grant took this picture in what is today Koninginnestraat.



The Sergeant's Mess of 284 Squadron in happier times — Eastbourne, 1944. Identified are, back row, L-R: 1. L/Sgt Martin Reagan, 3. L/Sgt Arthur Redrup (killed at IJzendijke), 4. L/Sgt Rees Barton (killed), 5. L/Sgt Bayliss, 7. L/Sgt Mostyn Davies

(wounded); centre row: 1. L/Sgt Marsh, 2. L/Sgt Fred Weston (missing), 3. Sgt Cyril Cook, 4. Sgt Harris, 6. Sgt Lew Bridges, 13. Sgt Pennock; front row: 4. SSM White, 5. Major John Blomfield, 6. Captain E. March, 7. SQMS Russell, 9. L/Sgt Jim Harding.

at Aldborough on the Suffolk coast, training and preparing for invasion at the 'ARE (Assault Royal Engineers) School' on the nearby Orford Battle Area.

Its weapon, the AVRE, was basically a converted Churchill, the main change being that the gun had been replaced by a 'Petard', a 290mm spigot mortar which could launch a 40lb projectile with a 26lb explosive charge (known as 'the flying dustbin') against enemy concrete fortifications. In addition, AVREs could operate a whole range of special equipment, such as assault bridges, Fascines (bundles of wood to fill up ditches), Snakes (long lengths of steel pipe stuffed with explosive to be pushed into minefields and blow a path through it), and other special devices. The AVRE had a crew of six, all Royal Engineers except for the driver. All drivers in the assault squadrons had been recruited from the RAC or Royal Tank Regiment — they retained their rank of Driver and were allowed to continue wearing the tanker's black beret.

Originally, armoured assault squadrons consisted of four troops of six tanks each, plus a HQ section of two tanks and one armoured recovery vehicle (basically a Churchill tank with the turret removed), giving a total of 26 AVREs and one ARV. However, in August 1944, all assault squadrons were reduced from four troops to three, the number of AVREs in a squadron thus dropping from 26 to 20.

Six assault squadrons were assigned to the D-Day landings, but 284 was not one of them. On June 13, the squadron was loaded on to rail flats and moved to Eastbourne to await transfer to the continent. On August 6, they left by rail for Portsmouth, off-loading at Gosport. The whole squadron embarked in one LST, which sailed that same night, and made a dry landing into the Normandy bridgehead through the 'Mulberry' harbour at Arromanches on the 8th. Concentrated with the rest of 6th Assault Regiment, it began intensive training in rafting and bridging for the planned Seine crossing, first near Courseulles and later at Hérouville on the east bank of the Orne.

After the breakout from Normandy, the squadron crossed the Seine at Rouen to join

The squadron's route (dotted line) from Driekwart, where the AVREs left the transporters late on October 19, to the T-junction south of IJzendijke, where the squadron set up camp for the night at the De Dobbelaere farm.

British I Corps for the operation to reduce the Channel port of Le Havre (September 10-12). Its task was to breach one of the gaps for the 153rd Brigade of the 51st Highland Division. Only one troop was committed, the other two remained on stand-by.

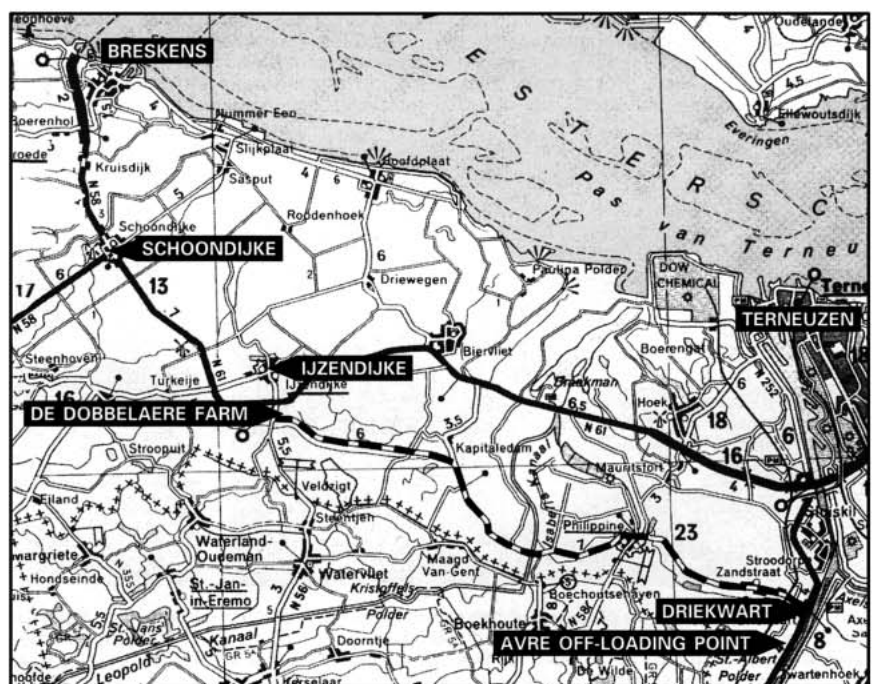
Between September 25 and 30, the whole squadron saw action near Calais, helping the Canadian 3rd Division to capture the cross-Channel guns at Cap Gris-Nez, Sangatte and Noires Mottes (see *After the Battle* No. 29).

Entering Belgium, the squadron stayed three days at Poperinghe. On October 8, it moved by tank transporter via Ypres to Aalter (Aelter), thence on tracks to the prepared harbour at Waterlopoen. It was here that the unit received its orders for 'Switchback'.

At 1500 hours on the 19th, in rainy weather, the squadron set off on its tank transporters for the Breskens Pocket. To reach it, they had to detour east and pass through the 'land gap' at Driekwart, a hamlet alongside the Ghent-Terneuzen Canal. A few hours later, at dusk, the heavy convoy crossed the Belgian-Dutch border and stopped on the road that runs along the west

bank of the canal, about a mile south of Driekwart. Here, the tanks were off-loaded, the plan being that they would drive the last ten miles or so under their own power. From Driekwart the route led through Zandstraat and Philippine to a Y-junction, where a left turn would lead to the planned assembly area, the T-junction of Isabellaweg and the IJzendijke-Eeklo road, just south of IJzendijke.

By now, night had fallen. At the Driekwart turn-off, a dispatch rider pointed the way with a torch. In the pitch-black darkness, tank drivers had a difficult time keeping to the road. Apart from the AVRE's masked headlight and two small sidelights, they had only the small, red rear light and the exhaust flames of the tank in front to guide them. Meanwhile, the squadron commander, 28-year-old Major John Blomfield, went ahead in his armoured car to scout the assembly area. In the fields north-east of the T-junction of Isabellaweg and the IJzendijke-Eeklo road, about 200 yards distant from each road, stood a farm. This Blomfield selected as harbour for the night.

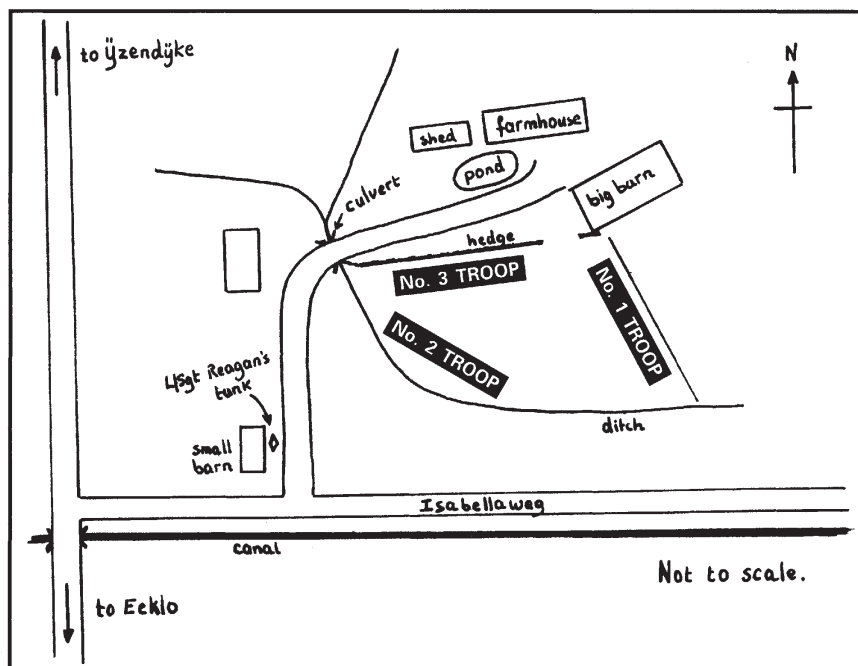


The farm belonged to Mrs De Dobbelaere-Buyse, the widow of Henri de Dobbelaere, who lived there with her three daughters and two sons. The farm was reached from Isabellaweg by a tree-lined cobbled track. About halfway up, this track made a right curve and then passed over a culvert before reaching the farm. By the side of the track, and just in front of the farmhouse, was a circular pond used for watering horses. More to the right, across the yard from the farmhouse, stood a large wheat barn, and behind that was a small orchard. From the corner of the barn back to the culvert ran a hedge. An opening in this gave access to a large field.

One by one, the AVREs turned off the main road and onto the entrance road. As the 40-ton vehicles drove up to the farm, the culvert in the track collapsed under their weight. Though now submerged in water, it was still passable for tanks, but lorries had to be helped across by the recovery tank.

At the farm, the tanks were assigned a place to park in the field behind the hedge. No. 1 Troop went to the left, No. 2 Troop to the right, alongside the ditch, and No. 3 Troop lined up alongside the hedge. This formed a rough triangle. As it was already dark, the crews did not erect any bivouacs, but were told to find a place to sleep in the big barn.

However, not all of the squadron's 20 AVREs had arrived, for one tank of No. 3 Troop, that commanded by Lance Sergeant Martin Reagan, had dropped out of the column. Reagan's tank had been the last in the column. On setting out, the crew noticed that it had forgotten to replace the steel bar on which the headlight was mounted (at Cap Gris-Nez, they had carried a Fascine, the cradle of which necessitated removal of the bar). This was bad enough, but the situation became impossible when the column reached a stretch of road near Driekwart which was submerged in water, preventing the driver from even seeing the light of the tank in front. Over the radio, Reagan asked his troop commander, Captain E. March, permission to stop and fix their light. March concurred, giving Reagan the map reference of the assembly area at the T-junction (132095). By the time the crew had fitted the bar, the rest of the squadron had disappeared in the night, and the lone AVRE had to find its way by itself. Map-reading in the dark, Reagan missed the left turn into Isabellaweg that would have led directly to the T-junction. Four miles further on, they entered a village. From a group of Canadian infantrymen, they learned they were at IJzendijke. A sergeant pointed the way to the Eeklo road. They found the T-junction but, seeing no sign of



the squadron, they laid up for the night in a shed by the side of the road some 200 yards further on. The crew could not know it, but dropping out of the column had probably saved their lives.

Next morning, October 20, dawned heavy and grey. At the farm, the tank crews woke up to begin their usual routine. Most of them stayed in the barn. Some of the gunners took out the Besa machine guns from the tanks to strip and clean them.

Apart from the De Dobbelaeres, there were quite a few other civilians at the farm: Florence, the housemaid; Peet Steenkiste, the farm hand, with his two sons, Johan, 16, and Theo, 13 (whose cottage at nearby Ponte Avancé had been flooded by German inundations); the two Riemens brothers from Zaamlant, who were tenant-farmers of the family; and about half a dozen others, refugees from the war, who had found shelter at the farm in the preceding weeks.

About 0900 hours, Sergeant Reagan and his crew returned to the T-junction and, noticing activity at the lone farm, guessed it was their squadron. Making contact over the wireless net, they were told of the collapsed culvert and were advised not to cross it, lest they damage it further and make the passage for lorries even more difficult, but to park their AVRE at the beginning of the entrance

road. Reagan found a spot next to a small barn and walked up the track to where the rest of the squadron was. He entered the big barn, going up the stairs to see the place assigned to his crew, then had a look at the field where his No. 3 Troop was parked. Here he was told that his crew had been assigned to operate a Conger in the forthcoming attack.

The Conger was a mine-clearing device. Another of the 79th Armoured Division's 'funnies', it had been developed in early 1944 as an alternative to the Snake. A length of 300 feet of canvas hose, carried in a trailer (a so-called 'guttled carrier') behind the AVRE, was launched empty across a minefield with a pre-aligned 5-inch rocket. It was then filled under pressure with liquid nitro-glycerine and detonated, causing the mines to explode and creating a six-metre-wide path through the minefield. The AVRE would pull the Conger to the edge of a minefield and there release it. To operate it, the crew's Demolition NCO had to leave the tank through the side pannier. After launching the hose, pumping it full with explosive, and pulling the igniter, he would be picked up by the AVRE.

Operating the Conger was a dangerous business. Nitro-glycerine is a highly-volatile, very unstable explosive which must be



Left: We owe the unique pictures of the scene of destruction at the farm to Ko de Man and Leon Neve, two officials of the Centrale Controle Dienst, an agency of the Dutch food-rationing organisation, who stopped at the farm a few days after the



explosion. Here, De Man poses next to their Ford V8 official car. The explosion field is to the left, behind the hedge. The collapsed culvert is in the background, where (right) today the tall trees stand. Note the tank tracks in the mud. (via A. Willems)



The explosion field as seen from the farm track. This is the area about where No. 1 Troop was parked. The wrecked Canadian lorry is on the edge of a large crater; two destroyed AVREs can be seen on either side. Judging by the all-round destruction, this could well be the spot where the initial explosion occurred. (via A. Willems)

handled with the utmost care and the slightest violent movement can lead to detonation. The Conger carried about a ton of the amber-coloured, treacherous liquid in a container tank. Filling the container or pumping the nitro into the hose was in itself tricky, but the risks of handling a Conger under fire were even greater. On September 15, a Conger had been tried out at a minefield near Le Havre. The trial report concluded: 'Any practical use which exposes either Conger, or hose when projected, to enemy fire makes the handling of this device a most hazardous process and it is most unlikely that the hose could escape being hit, especially if mortar fire was being brought down in the area concerned.' Despite its risks, a Conger had been used, successfully, by 284 Squadron at Calais on September 25 in the attack on the Noires Mottes gun positions — the weapon's first-ever operational use.

It is unclear exactly how many Congers 284 Squadron was to use in the IJzendijke attack. Martin Reagan is sure that No. 3 Troop was to employ only one, the one assigned to his crew. However, Troop Sergeant Harry Prince of No. 2 Troop remembers that he was to stand by to operate a Conger as well, so there might have been two.

Reagan was shown the spot where he was to park his tank after the lorries had recrossed the culvert. This was where his crew would have to fill up the Conger with nitro-glycerine. He then returned to his AVRE parked near the main road.

Later in the morning, Major Blomfield left the farm in his armoured car, probably to attend an 'O' Group and meet up with the commanders of the Canadian units his squadron was to support. Records show that Major E.E. Hall, the (acting) commander of the 6th Assault Regiment (and 79th Armoured Div Representative at 3rd Canadian Division HQ), and his Intelligence Officer, Lieutenant T.L. Grimley, attended a conference at the Glangarries battalion CP at Hoofdplaat at 1000 hours to plan tomorrow's attack on Breskens, and it is probable that this is where Blomfield went.

About the same time, a convoy of 3-ton



Above: The same crater, but now seen from the other side, looking back to the track. Judging by the blown-off turret, this particular AVRE might well be the one which blew up one hour after the initial explosion. (via D. Brock) Below: The same field 53 years later. Flags put up on the occasion of the unveiling of the IJzendijke memorial mark the line of the hedge that closed off the field in 1944.



lorries arrived at the farm. They belonged to the 7th Canadian Infantry Brigade Company, Royal Canadian Army Service Corps (RCASC), and had come to deliver supplies of food, ammunition, petrol, and the nitro-glycerine for the Conger. Again, the exact number of lorries is not known: some sources say there were nine, others say 14. How many of them were carrying nitro-glycerine, is also unknown: the squadron itself later was

uncertain about whether there had been one or two. Since they were 3-tonners, some accounts say the total volume of nitro delivered was six tons. However, this multiplication is too simple, for the lorries were probably not loaded to full capacity. Harry Prince recalls that the nitro lorry he saw had about 20 jerrycans, i.e. 100 gallons. The total volume delivered was probably between one and three tons.

One of the AVREs that was left behind as a write-off (also visible in the background of the previous shot). 'Nomad' belonged to No. 3 Troop and was commanded by L/Sgt Hill. Of its crew, Sapper Harry Smith was killed and Corporal Gordon Glover wounded. Sapper Ted Hamston escaped injury. All tank names in 284 Squadron began with an 'N'. The call sign '3E' (Three-Echo) indicates that this is the fifth tank of No. 3 Troop. (via A. Willems)

As each lorry came to the damaged culvert, it had to be pulled across by the squadron's armoured recovery vehicle. The ARV was a very powerful vehicle and the lorries had a rough time. Martin Reagan, who saw them being hauled across, wrote: 'In retrospect, I shudder when I think of the lorry carrying the nitro-glycerine receiving this treatment.'

It was early afternoon. Troops had just finished or were having lunch. Many were in or near the barn. Others were with their tanks, unloading the Canadian lorries or refilling their AVRE with fuel and ammunition. The lorries with nitro-glycerine were somewhere near the Congers. The time was shortly after 1300 hours.

All of a sudden, a thundering explosion rent the air.

Romain de Dobbelaere, one of the sons of the family, recalls: 'Suddenly, there was this terrible explosion. None of us heard the blow, but at the same moment we were smashed to the ground by the enormous shock wave. All of a sudden, it was completely dark; the explosion had created a thick, black cloud of smoke and you could not see a thing in the entire surroundings.'

The explosion had turned the area into a scene from Dante's inferno. The farmhouse and the outbuildings had been completely wrecked by the blast. All around, fires were raging. Tanks and vehicles were engulfed in flames. The trees in the orchard were burning like torches. Body parts of men who had been ripped apart by the explosion lay strewn about. Men with terrible burns or shrapnel wounds lay moaning or screaming in agony. Others were running around, trying to drag people away from the flames or attend to the wounded.

Troop Sergeant Harry Prince of No. 2 Troop had been standing on the track by the watering-pond to direct the incoming lorries. The food lorries would deliver their load to a central ration point, but the ammo, fuel and nitro-glycerine would be brought directly to the tanks. Owing to the delay at the culvert,



the trucks came up one at a time, with a few minutes in between. The first one that Prince met was carrying petrol, and he pointed it to go to his troop. The second was loaded with nitro-glycerine; this he also directed into the field. Again, a few minutes elapsed before the third vehicle arrived. It carried a mixed load of ammo, and Prince instructed the driver where to go. He had just turned around and was walking up to the farm when, suddenly, he was lifted off his feet by a blast of hot air coming from behind. He never heard any bang. His first thought was that an enemy shell had landed right behind him. Flying through the air about 20 feet above the ground, clawing with his hands and feet to get a grip, he saw the facade of the farmhouse in front of him collapse. The whole building 'just seemed to disintegrate into a heap of rubble'. As he landed with a smack, he saw two females stumble out of the ruined house, both dazed and bleeding. One of them had her clothes torn open, exposing a bleeding breast. Picking himself up, Prince ran up and applied a shell dressing on the girl's chest. Suddenly, he thought of his men. Only now, looking up, he saw that the big barn had been flattened too. Among the debris, he noticed Sapper Harrison, a member of his own troop, who indicated that he was unhurt and needed no help, so he turned around to where the tanks were parked. His eyes met a scene of carnage. Several AVREs were on fire, with flames coming out of the turret. The first man he saw was Lance Sergeant Rees Barton of his No. 2 Troop,

apparently unhurt and leaning with his back against his tank. Barton was trying to say something, but Prince could not hear what, for his ears were completely deaf from the blast (his right eardrum had burst). From his lip movements, Prince read something like 'Help me'. As he came near, Barton gave a last gasp and died.

Prince moved on to the second tank, which was on fire. There was no sign of the crew. A bit further on, he noticed a man lying in the open field with wounded legs. These he dressed. Shortly after, Prince must have blacked out, for he has no further recollections of that afternoon.

Sapper Harry Hooker was the co-driver in Sergeant Dilworth's crew, also of No. 2 Troop. Their AVRE was the last but one in the line of six along the ditch. Hooker was squatting beside the tank, cleaning his Besa machine gun, when the explosion occurred. The tank sheltered him from the blast but his fellow crew members, who were on the other side, were all casualties. The gunner, Sapper Jack Whittington, was killed. His ears ringing, Hooker looked up to the next tank in line and saw one of its crew members grizzily wounded with his intestines hanging out.

No. 3 Troop was alongside the hedge. Sapper Ted Hamston, the co-driver in Lance Sergeant Hill's crew, was refuelling his AVRE together with Sapper Harry Smith, the wireless operator. Hamston had just sat down against the turret of the tank to take a rest when the explosion came. The protection of the armour saved his life, but Smith,



Left: One of the hardest-hit crews of No. 2 Troop was that of Lance Sergeant Rees Barton — five out of six became casualties. Back row, from left: Sappers Jim Wilson, tank gunner (missing), Ron Cann, co-driver (died of wounds, October 21); Jim Maybee, wireless op (killed). Front row: Lance Corporal J. Downes, demolition NCO; Lance Sergeant Barton (killed); Driver Charles Foster (wounded). (via M. Reagan) Above: Another of the Canadian lorries, next to one of the craters.

who had been standing on the deck pouring out the petrol, was not so lucky. When Hamston looked up, Smith had disappeared. (Killed by the blast, he had fallen off the other side, between the tank and the hedge.)

About 30 yards away, in the centre of the field, Hamston saw another of his crew, Corporal Gordon Glover, the Demolition NCO, with serious shrapnel wounds in both legs and one hand. He went over to him and gave him a morphia injection. (Glover survived, though he lost the hand.) Completely deaf from two burst eardrums and unable to talk, Hamston had to communicate through sign language.

Driver Jim Gooch was the driver of the squadron's recovery tank. He was standing on top of the tank, unrolling a tarpaulin over the ARV's big hatches to keep rain from leaking in, when he was suddenly 'blown off by a gust of wind'. Like many of the men close to the explosion, he did not hear any bang. Landing hard on his back, he looked up and saw 'everything go up in the air'. Figuring that what goes up, must come down, he quickly scrambled under the tank. As he lay underneath, he heard metal and debris raining down on it. Creeping out from under the tank, Gooch was horrified to see a man's head lying near by. Gently, he picked it up and laid it to the side.

Lance-Corporal Harry Lightfoot was in the same crew as Gooch, but he and the others were near the barn. In a letter written shortly after, he wrote: 'We were brewing a cup of tea in the truck when the whole world fell on top of us. After gathering our senses, we jumped out to find that a ton of nitro had gone up and a hellish mess was all around us. [Driver] Harold Miers, sitting next to me, had a gaping shrapnel wound in the head from which he died four days later. Poor old Hughie [Sapper Hugh Gagen, the co-driver] had the side of his face laid open and one eye blown out. Bob [Corporal Bob King, the ARV electrician] had a lump of shrapnel in his back and out of his hip. I never saw such a mess. Some of the dead were never found and others were literally blown to bits.'

Major Blomfield, the squadron commander, had just returned from his 'O' Group and had stopped his armoured car at the entrance to the farm to talk to Lance Sergeant Reagan, who was having lunch with his crew. Reagan was just explaining why his tank was not parked with the others when they heard a tremendous explosion.

'Good God, what was that?', Blomfield said and, shouting down to his driver, he sped off along the road to the farm. As Reagan turned around, he saw his driver, 'Ginger' Hall, lying on the ground, crying out in terrible pain, with a shattered leg. The others were unhurt. The petrol container Reagan



**A fourth destroyed AVRE, with another wrecked lorry behind it. These two are a little closer to the ditch which bordered the field on its west side. The trees line the farm track back to the main road. (via C. de Dobbelaere-Govaert)**

himself had been sitting on had a large shrapnel hole in it.

Having attended to his driver, Reagan crossed the culvert on foot. His first impression as he entered the Squadron Park was 'the loss of order and symmetry. All was chaos and confusion. As a soldier you become accustomed to definite patterns, neat lines, and everything well ordered and in its place.' All this was suddenly absent.

Searching through the wreckage of the destroyed barn, Reagan discovered a young soldier, Driver William Malcolm, who was unconscious and had terrible chest injuries. Reagan stayed with him until a medic took over. (For many years after, Reagan would wonder whether Malcolm had survived; only in 1996 did he learn to his great disappointment that he had died of his wounds.) Shortly after, looking around the tanks, Reagan came across another soldier he knew, Driver Charles Foster of Sergeant Barton's crew, who came walking towards him with great difficulty. Reagan took him to where the wounded were being assembled.

Captain Eric Pattenden, the No. 2 Troop commander, had been to an 'O' Group and was lining up for a late lunch when the explosion occurred. Though hit in the leg by flying debris, he 'dashed around' helping with the aftermath as much as he could, until he was evacuated to hospital about an hour later. He was the only officer casualty.

No civilians were killed by the explosion. Most of the people inside the house escaped serious injury, but not all. Daughter Aline de Dobbelaere had been hit in the face by shrapnel (she would lose an eye), her sister Marie had an ugly breast wound. Piet Schoe, one of the evacuees staying at the farm, was in the orchard behind the house and this

sheltered him from the blast. He ran up and comforted the girls as they awaited evacuation.

The two Steenkiste boys, Johan and Theo, were busy helping their father and another man, Kees Osté, to bury a dead horse when the explosion came. Next thing they knew, all four were lying in the pit next to the cadaver. Picking themselves up, they hid in a German shelter, where they found one British soldier, injured in the chest and hip. They waited till the initial explosions had died down, then brought the wounded soldier to the farm. 'We carried him more than that he walked', recalled Johan. 'He was talking to us in English all the time, but we understood nothing of it.' The boys were shocked by the carnage around them: 'We had seen dead people before, victims of the shelling just before liberation. But this was really terrible.'

Just ten minutes earlier, Johan and Theo had been standing near one of the tanks, begging for cigarettes. The crew had been unloading what the boys thought was 'wooden matting' from a lorry using some sort of crane. This tank had now exploded, and the crane had been hurled over 200 yards away, landing on the far side of the canal along the main road. The boys admired the discipline of the British soldiers. 'An order was called out, and shortly after, the undamaged tanks were driven right through the fire to a safer spot.'

Corporal Vivian Clarke was the NCO in charge of the squadron wireless. On arrival at the farm, he had selected a site near the farmhouse some yards away from the other vehicles, mainly lorries. They had linked with Regimental HQ, but radio silence had been ordered. He was just walking towards the



**Left: A close up of the lorry seen in the previous shot. On the left is the small barn at the farm entrance, where Lance Sergeant Reagan parked his tank, away from the others**



**because of the collapsed culvert in the farm track. (via A. Willems) Right: Today, the trees along the track have gone, and a modern barn hides the old one, which still stands.**



**The squadron's Light Aid Detachment truck which was wrecked when the AVRE blew up one hour after the first explosion. Our comparison (below) shows that the LAD truck was in fact quite a few yards away, in the field across the track, next to the farm pond — striking evidence of the force of the second explosion. (via A. Willems)**

wireless vehicle when the explosion occurred. He recalls: 'The sound and vibration was tremendous and I fell to the ground outside the lorry not knowing at the time what had happened, first thought being we had been hit by the Germans. Getting on my feet and looking around, I could see the huge smoke and fires and realised we had a serious problem.'

Clarke knew that immediate help was urgent. However, breaking radio silence without permission was a court-martial offence. He looked around for an officer who could give him authority, but was unable to find one, so he decided to act on his own accord.

'We sent a coded message to request urgent medical aid using Morse. For some reason, the operator at HQ failed to understand the code, so I decided to use RT and gave briefly how serious the matter was and requested all medical assistance at once, aware of possible enemy listening in.'

Meanwhile, medics and other personnel from units in the area had come rushing to the site to help. The wounded, many of them badly burned, were collected at a central point. It was not long before a column of ambulances and stretcher Jeeps arrived to take away the wounded. They were brought to a field hospital at Bruges in Belgium.

Bodies of men who had been killed, some of them completely charred, were laid in a row alongside the hedge near the culvert. The most gruesome task was to look for and collect body parts of soldiers ripped apart by the explosion. Most men were greatly upset by this job, but some were more callous. Piet Schoe was shocked to see a soldier bringing in a human leg while impassively eating an apple. (However, not everything was found, for in the days afterwards, the Steenkiste brothers would find more human remains: a shoe with a foot still in it, or some other limb; on one occasion a shirt, with a few ribs still stuck inside. All these they buried on site.)

Shortly, the civilians were evacuated too. The De Dobbelaere family was brought to relatives outside IJzendijke. Even those who had fled to neighbouring farms (which were damaged too) had to go.

But the catastrophic chain of explosions was not yet over. Lance Corporal Lightfoot: 'After getting everyone away to hospital, we set about trying to get sorted out. About an hour later, one of the tanks blew up and the LAD [REME Light Aid Detachment] truck went with it. Corporal Blackshire was

severely injured about the legs and another general fitter later died from his injuries. The tank was just small pieces, the turret was at least 100 yards away and a front horn was in the next field.'

Just five minutes before, Lightfoot and Gooch had moved the recovery tank away from the burning AVREs. They were just getting back to the farm to get some tea when the second explosion occurred. They were on the floor before the crash came, their only fear being that something heavy might drop on them.

Three tanks had been set on fire by the initial blast, and one of these had now exploded. Seven soft-skinned vehicles had been wrecked. The lorry (or lorries) that had carried the nitro-glycerine had completely disappeared. The series of explosions left three large craters in the field.

Details concerning casualties and AFVs destroyed vary considerably in the various war diaries. This reflects both the growing losses and the confusion of the first hours. The squadron war diary reported: '1330 hrs: Large explosion in forward harbour destroyed 3 AVRE, 7 B vehicles, various ARE stores and stacked ammo and 1 or 2 lorry loads of explosive 822 [the code designation for nitro-glycerine]. Squadron casualties one officer wounded, 28 other ranks killed or missing, 40 other ranks wounded. One AVRE blew up after main explosion, remaining AVREs and B vehicles superficially damaged.'



At 1500 hours, the 6th Assault Regiment diarist laconically noted: 'Explosion in 284 lines — 2 lorry load 822 detonated — 4 tanks and 66 personnel casualties.'

At the end of the day, the 9th Canadian Infantry Brigade noted: 'This afternoon, as the assault armour of a regiment of the 1st Assault Brigade was lying concentrated in IJzendijke 1310, one of the vehicles carrying flame-thrower liquid [sic] exploded, which in turn blew up ten armoured vehicles. Casualties were high, the total being 84, which included 42 killed. Due to the misfortune, no bridging tanks or fascines will be available for the Breskens attack.'

This was very bad news for Lieutenant-Colonel Roger Rowley, the commander of the Glengarries, who had planned on the AVREs bridging the Breskens anti-tank ditch and knocking out its strong points. When, in addition, Rowley was informed that the bomber support would probably not be available because of bad weather, he asked his division commander, General Spry, to cancel the attack. However, Corps ordained that the attack should go in, and on time.

By now, the area around the farm had been sealed off by Canadian Military Police. Even the Burgomaster of IJzendijke, Dr. Arie Brouwer, who came to inquire about the accident, was refused access and denied information by the Provost. With nightfall, the survivors of 284 Squadron were called together and taken to a nearby farm, about 400 yards east of the De Dobbelaere farm, where they spent the night in a barn.

In addition to the sappers and RCASC men, the explosion had killed three men of a recce party of 85th Battery, 11th Medium Regiment, RA (a British unit just moving into the area); and also, most probably, killed five men of the Highland Light Infantry of Canada, and fatally wounded a sixth. In all, 41 men — 26 British and 15 Canadians — had been killed in the explosion; 16 of them — nine of 284 Squadron and seven of the RCASC men — had completely disappeared and no trace of them could be found after the explosion. Forty-three others had been wounded, a total casualty figure of 84. In one stroke, 284 Squadron had lost over half its men. Of the RCASC men, 10 out of 18 had been killed. Of the wounded, the HLI man died in hospital the same day. In the days after, four of the wounded sappers were to succumb as well, making for a final toll of 46 killed and 38 wounded.

Early next morning, October 21, the surviving officers and men of 284 discussed among themselves whether they were prepared to ignore rank and make up crews for the available tanks. Everyone was keen that the squadron, though depleted, should still go in and do its bit. There were enough men to man six tanks, and everyone prepared himself for action. But it was not to be.

Shortly after, Major-General Percy Hobart, the 79th Armoured Division commander, visited the men in the barn. He was accompanied by Brigadiers Nigel Duncan, the commander of 30th Armoured Brigade (and the 79th Division Representative for 'Switchback' at Canadian II Corps HQ), and Geoffrey Watkinson, the commander of the 1st Assault Brigade. Calling the men together, Hobart talked about the hardships and casualties of the First World War, and how they had carried on in spite of everything. His speech did not go down very well.

Within an hour of the general's visit, the men were told that they were going to recover the usable tanks and load them on to transporters. This was their first inkling that they were going to be pulled out, and they felt bitterly disappointed. Troop Sergeant Harry Prince: 'We were all keen and ready to go in. We felt let down, cast aside.'

Lorries took the men to the collapsed culvert. Crossing over to the scene of destruction, they decided which tanks could be driven out and which had to be pulled out by recovery tanks. All AVREs except the four destroyed ones were recovered and loaded on transporters which stood waiting on the main road. The transporters then took the squadron back over the border into Belgium to a château near Maria-Aalter, 12 miles south-east of Bruges. Meanwhile, a party from the squadron's B Echelon (which had been at Eeklo when the explosion occurred) recovered bodies and personal kit from the scene of the explosion. Of the 25 bodies, 20 were buried in the temporary cemetery at Maldegem, the five HLI dead going to Biervliet.

The squadron was released from 'Switchback' and put back under command of Division. To replace it, 87 Assault Squadron, RE, which was already earmarked for the amphibious landing on Walcheren (Operation 'Infatuate' — see *After the Battle* No. 36), was temporarily released and assigned to the Canadians.

That same morning, October 21, the Glen-garries attacked and captured Breskens. In the event, none of the special armour was used. Next day, October 22, the HLI of Canada assaulted Schoondijke, again without special armour, though AVREs of 87 Squadron and Crocodiles of 141st RAC would support the battalion in the final clearing of the village the following day. On the 24th, 617 Squadron (which had been hastily transferred from Overloon in eastern Holland) relieved 87 Squadron to successfully support the Canadians north-west of Oostburg on the 28th. (The last of the Breskens Pocket was eliminated on November 2.)

On the morning of General Hobart's visit, an official Court of Inquiry was held on the scene of the accident by the 79th Armoured Division. The Inquiry appears not to have relied on eyewitness accounts, for none of the survivors remember being questioned by anyone that day.



**Above: The farmhouse was completely ruined by the blast of the nitro explosion. Below: After the war, a much smaller house was built in its place. New trees obscure its view, but the pond helps to orientate us. (via C. de Dobbelaere-Govaert)**



The Inquiry report has never been published. Strangely enough, no copy of it can be found in the Division's war diaries kept at the Public Record Office today either, so its precise considerations and conclusions are unknown. However, from what can be found in other records and published accounts, one is able to reconstruct some of it. What is certain is that the Inquiry could only speculate on the precise root cause of the explosion and merely list the various possibilities that offered itself, without being able to draw a definite conclusion.

One explanation put forward is that the

explosion was triggered by a vehicle driving over a land-mine. If so, it cannot have been one of the tanks, for all eyewitnesses agree that these were all stationary. Several published post-war accounts claim to know that 'the 14th lorry hit a Ratchet mine buried in the road and blew up'. However, as far as is known, the Germans did not lay any mines around the farm. Veterans, however, do remember one detail that could indicate the presence of mines. The day after the explosion, as the men were recovering the tanks, three horses had been galloping in an adjoining field. Suddenly, an explosion erupted



**Left: The big barn, used as sleeping place and canteen by the men of 284 Squadron, was completely flattened by the blast,**



**causing many casualties. (via D. Brock) Right: A new barn was built just behind where the old one stood.**

beneath the middle horse, killing it. The detonation could have come from an anti-tank mine. On the other hand, it could equally well have come from a residue of the nitro-glycerine, a small nitro-soaked particle flung away by the explosion — a hoof's beat on such an object would be enough to make it explode.

Another possibility is that an enemy shell caused the explosion. However, no shelling was going on near the farm, nor did any shells land after the explosion occurred so, if at all, it must have been a lone, stray, lucky round.

Another theory is that a lorry carrying nitro-glycerine may have exploded after its rough passage over the collapsed culvert. However, if this was the case, one would expect the nitro to explode at the bridge, while it was being rocked about, not some time later.

A fourth theory is that the nitro-glycerine exploded while it was being unloaded from the truck, or being poured into the Conger container. Several scenarios present themselves. Someone may have dropped one of the nitro jerrycans. The nitro may have exploded from sparks caused by static electricity built up around the metal jerrycans. (For this reason, handling instructions ruled that the nitro be poured into the container using a non-metallic funnel, so as to prevent metal touching metal.) A discarded cigarette is also a possibility, although smoking near tanks was strictly forbidden.

There is no doubt that the detonation of the nitro-glycerine caused the greatest damage. However, the possibility that this explosion may have been triggered by the explosion of something else must be considered. Being assault engineers, the squadron routinely carried other explosives, usually stored in the side panniers of the AVREs. However, these required a primer and detonator to initiate an explosion, and were considered quite safe. Another possibility is a fuel explosion. Though refuelling was a routine procedure carried out hundreds of times, it always retained a certain risk. One thing is certain: even if these materials did not cause the initial explosion, the great amount of other explosives, petrol and ammo that had just been delivered undoubtedly contributed to the blaze of fire and destruction.

No one person will ever know the exact cause of the disaster. One thing hampering any explanation are the many unknown factors surrounding the incident. Where exactly did the initial explosion take place? Where were the Canadian lorries when it occurred? Were some of them still moving or were all stationary? How many lorries were carrying nitro-glycerine? How many tons of nitro-glycerine were there? Was there more than one Conger?

Whatever its cause, the explosion at IJzendijke sealed the fate of the Conger. Although still earmarked for further development, it was never again used in action. Though spectacular, the device was simply too dangerous. Also, as a mine-clearing device, it was less satisfactory than the Snake, and the Flail tank was far superior to both.

The men of 284 Squadron were never told that an official inquiry had been held. They stayed at the Maria-Aalter château for about a week. On the 22nd, a Sunday, a service was held to commemorate those who had been killed. Two days later, the men were taken to Bruges to visit their wounded comrades in hospital there.

On the 23rd, the squadron had reverted to Second Army reserve. On the 26th, it moved to the town of Lier, south-east of Antwerp, where it remained for about four weeks to reform. With over half of its men killed or wounded, 284 had to be rebuilt practically from the ground up. New tanks were received, replacements arrived, a few men



On October 24, Lance Sergeant Martin Reagan, commander of AVRE '3F', and a few others managed to visit their wounded comrades in hospital in Bruges, Belgium. That same day, they had this photo taken. Back row, L-R: Martin Reagan; Lance Corporal Maurice Phipps, No. 3 Troop senior wireless operator; Lance Sergeant Jack Kyte, tank commander in another troop. Front row: Lance Corporal Tommy Madden, demolition NCO, and Sapper Phil James, wireless operator, both of Reagan's crew; and Sapper Fred Caudron, a gunner in another No. 3 Troop crew. (via M. Reagan)

returned from hospital. Back to full strength, the squadron moved to Bladel, a village west of Eindhoven, with the rest of 6th Assault Regiment, where it spent December experimenting with new devices, particularly in connection with anti-personnel minefields.

In February 1945, the squadron supported the 15th Scottish Division at Kleve and Goch during the Reichswald offensive, giving a hand to other divisions as well. During the Rhine crossing, which began on March 23, 284 was one of three squadrons operating the heavy Class 50/60 rafts (which could carry tanks) in support of the 51st Highland Division. Ferrying ceased on the 27th, after which the squadron came into XII Corps reserve. This was practically the unit's last action. Following the armies into northern Germany, by April 24, the squadron had reverted to 21st Army Group reserve. When the war ended, 284 Squadron was in the Baltic port of Lübeck under VIII Corps.

In 1945, the men buried at Maldegem and Biervliet, and the HLI man buried at Ghent, were transferred to the permanent Adegem Canadian Cemetery. The four sappers who died in hospital were interred at Antwerp Schoonselhof Cemetery, except Sapper Henry Lewis who went to Bergen op Zoom Canadian Cemetery. The 16 missing are on the Groesbeek Memorial to the Missing.

After the war, the men of 284 Squadron talked little about the IJzendijke incident. For many, the images of the gruesome accident were simply too horrible to remember. Also, because it was seen as a 'non-battle' accident, the survivors, perhaps unconsciously, considered it worth less mention than real combat action. A squadron reunion was never organised and, as time went on, contact between the veterans was lost. Over the years, the IJzendijke disaster never received more than a line or two in unit histories or accounts of the Scheldt campaign.

#### FATAL CASUALTIES IJZENDIJKE EXPLOSION, OCTOBER 20, 1944

##### 284 Armoured Assault Squadron, RE

###### Killed in action

L/Sgt Rees Barton  
L/Cpl Eric Brock  
Spr William Creech  
Dvr Paul Ernest Hammond  
Dvr William James King  
Spr James Lawson  
Spr James Martin  
Spr James Arthur Maybee  
Spr Donald William Rennie  
Spr Ronald Hugh Shepherd-Singleton  
Spr Harry Smith  
Spr Cyril Thompson  
Spr Edward Tuft  
Spr Jack Victor Whittington

###### Missing believed killed

Spr Albert Edward Carr  
Dvr Peter Samuel Nisbet  
L/Sgt Arthur Redrup  
Spr Alan Smith  
Spr William Walby  
L/Sgt Frederick Arthur Weston  
Spr Charles John Wilson  
Spr James Wilson  
Spr William Edward Young

###### Died of wounds

Spr Alfred Ronald Cann 21 Oct 1944  
Spr Henry George Lewis 21 Oct 1944  
Dvr William Malcolm 21 Oct 1944  
Dvr Harold Miers 25 Oct 1944

##### 7th Infantry Brigade Company, RCASC

###### Killed in action

Pte Albert J. Bateman  
Pte Clifford Emil Carlson  
Pte Francis Henry Wall

###### Missing believed killed

Pte Victor Barbour  
Pte Eric Biggin  
Pte Leonard Joseph Boatman  
Cpl Edwin Edward Larkin  
Pte Bernhard Joseph O'Connor  
Pte Lorne Edgar Roulston  
Pte Walter John Sandison

##### 11th (Essex) Medium Regiment, RA

###### Killed in action

L/Bdr Kenneth Leslie Sutherill  
Gnr William Rider  
Gnr Edward Bertie George Everett

##### Highland Light Infantry of Canada\*

###### Killed in action

Cpl David Beverley Newton  
Pte James George Philbrook  
Pte Joseph John Pittner  
Cpl William Short  
Pte John J. Syko

###### Died of wounds

Pte Ernest Reginald Young 20 Oct 1944

\*Involvement in IJzendijke explosion probable, but unconfirmed.



**Left:** Another hard-hit crew was that of Lance Sergeant Fred Weston of No. 2 Troop. Four of the five in this crew portrait became casualties: back row, right: Sapper Cyril Thompson (killed); front row, from left: Corporal Jack Jones (wounded), Lance Sergeant Weston (missing), Driver Peter Nisbet (missing). The family of Cyril Thompson tried for many years to



**break through the secrecy that appeared to surround the circumstances of his death. (via B. Aldridge) Right:** Edna Aldridge and Beryl Ainger, both sisters of Cyril, lay a wreath at the Adegem Canadian Cemetery on behalf of the relatives of those who died in the disaster. The ceremony at Adegem was held the day before the dedication of the memorial at IJzendijke.

The relatives of the British servicemen killed in the disaster were officially told very little about where and how their loved ones had died. The first official notifications only stated that they had been 'killed in action' (those to Canadian RCASC families, on the other hand, included a reference to 'an accidental violent explosion while employed in the transport of nitro-glycerine'); a letter of sympathy sent by 6th Assault Regiment in December 1944 spoke of 'a serious explosion on the battlefield' and named IJzendijke.

Some of those left behind simply refused to accept that their loved one was really dead. When, in 1947, the mother of Sapper Charles Wilson (of Sergeant Barton's crew) learned from a comrade of her son that he had been wounded in an explosion at IJzendijke, but that he had not seen him since, she wrote to the Burgomaster of IJzendijke to ask whether perhaps he knew of an Englishman in a Dutch hospital suffering from amnesia or shell shock.

The mother of Sapper Cyril Thompson of No. 2 Troop battered the authorities with requests for more information about the death of her son, but all she got out was that he had died 'in a big explosion behind the lines somewhere in Holland'. She died in 1974 not knowing any details of what had really happened in 1944. Later, his two sisters, Edna and Beryl, asked to see the official files — and were told to await expiry of the 50 years secrecy period. When this came in 1994, they were told the files were missing.

At IJzendijke, the De Dobbelaere farm was completely rebuilt, the first stone being laid in 1947. In December 1976, Romain de Dobbelaere-Govaert, the son who had taken over the farm, called in the Dutch Army to clear the field where the explosion had taken place, after his plough had brought up eight anti-tank shells. The Ordnance Disposal team found a rocket warhead (probably from the Conger), another eight shells, a 155mm HE grenade, eight rifles and Sten guns, about 100kg of assorted ammo, parts of 3-ton lorries, armoured plate and the bones of some seven horses. To this day, the family still finds small pieces of metal on their land, some of them showing signs of having melted under great heat.

Earlier, about 1960, Mrs Christiaene de Dobbelaere-Govaert had found a silver bracelet with the inscription 'Pte E.E. Larkin', which the family kept, hoping one day to return it to its rightful owner. It was only in 1984, when Belgian writer George Spittael visited the farm (to research the 1944 explosion for his book *Libera Me*) that they learned that Corporal Edwin Larkin was one of the Can-



**Mrs Patricia Blomfield, the widow of Major John Blomfield, the 284 Squadron OC (who died in 1992), lays a wreath at the memorial on behalf of the veterans.**

adians missing after the explosion. Through the Canadian Department of Veterans Affairs, Spittael was able to trace the family and, 40 years after Larkin's death, the bracelet was returned to them. That same year, again

through Spittael's good offices, John Brock, the brother of another casualty, Lance Corporal Eric Brock, visited the farm with his family — the first relatives ever to do so.

In October 1994, former Sergeant Martin Reagan, prompted by the 50th anniversary of D-Day earlier that year, returned to IJzendijke for the first time since the war and, with some difficulty, managed to find the farm, where he was warmly received by the De Dobbelaere-Govaert family. The emotional visit prompted a plan for a permanent memorial to the victims of the tragedy. His initial letters to the Mayor of IJzendijke, (today Oostburg) remained unanswered, but a letter to the local newspaper *De Stem* in October 1996 resulted in enthusiastic pledges of support from the residents in the area. A Dutch committee was formed which, led by its energetic secretary, Geert Aalders, quickly secured all the permissions needed to erect a memorial. Fund-raising was started in Britain and Holland, together with a search in Britain and Canada for veterans of 284 Squadron and 7th Brigade Company, RCASC, and for relatives of those who had died. A place for the memorial was found along the main road, overlooking the field where the explosion occurred, though some distance from it.

On October 20, 1997, exactly 53 years after the tragedy, the monument was unveiled in a ceremony attended by over 100 veterans, relatives and officials from both Britain and Canada, and a large crowd of Dutch people. After the ceremony, the veterans and relatives visited the farm and were given a reception by the memorial committee.



**A unique reunion: exactly 53 years after the IJzendijke tragedy, six survivors from 284 Squadron meet at the De Dobbelaere farm. Left to right: Ted Hamston, Martin Reagan, Jim Gooch, Harry Prince, Charles Foster and Harry Hooker.**

